S/051/63/014/003/017/019
B058/B514

AUTHORS: Belonogov, A.V. and Gorbunkov, V.M.

TITLE: Measurement of the refractive index of liquid hydrogen

PERIODICAL: Optika i spektroskopiya, v.14, no.3, 1963, 438-440

TEXT: It is noted that a knowledge of the refractive index of liquid hydrogen is of importance in the analysis of bubble-chamber photographs. The authors describe the principle of a device which may be used to determine the refractive index of liquid parahydrogen and normal hydrogen (25% para- + 75% ortho-hydrogen) in the equilibrium state at pressures of 1-9 atm to an accuracy of better than $\pm 2 \cdot 10^{-4}$. It can also be used to determine the difference in the refractive indexes of these two modifications in a given container to better than $\pm 10^{-4}$. The device is based on the fact that a plane-parallel plate (see figure) will displace the point of convergence (A) of a homocentric beam by an amount Δ which is proportional to the thickness of the plate and its refractive index. The object is a narrow slit 1 which is illuminated by a monochromatic source 2. It is imaged by a

Card 1/3

lens 3 in such a way that the converging beams pass through an evacuated vessel with plane-parallel windows and then again through the same vessel filled with liquid hydrogen. In order to ensure the necessary accuracy of determining the displacement Δ, two pairs of slits 4 and 4' are introduced symmetrically with respect to the lens 3 and define narrow beams. The latter are diffracted in such a way that two pairs of fringes are formed in the plane of the image of the slit. A small optical wedge 5 is used to displace one of the systems relative to the other. The image is observed through the microscope 6 with the container evacuated and filled with hydrogen. The refractive index n is then given by

$$n = \cos u \sqrt{\frac{t^2}{(t - \Delta)^2} + \mathrm{tg}^2 u} \qquad (1)$$

where t is the thickness of the hydrogen layer, 2u is the angle between the axes of the diffracted beams in air and Δ is the measured displacement of the plane of the image. The device has been used to determine the refractive index as a function of density and temperature at λ = 5460 Å. The density dependence is

linear, while the temperature dependence is linear up to about 26°K and thereafter falls off more rapidly as the temperature increases. There are 4 figures.

SUBMITTED: September 28, 1962

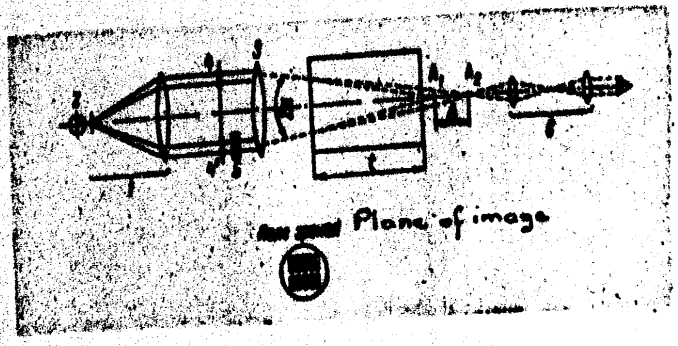
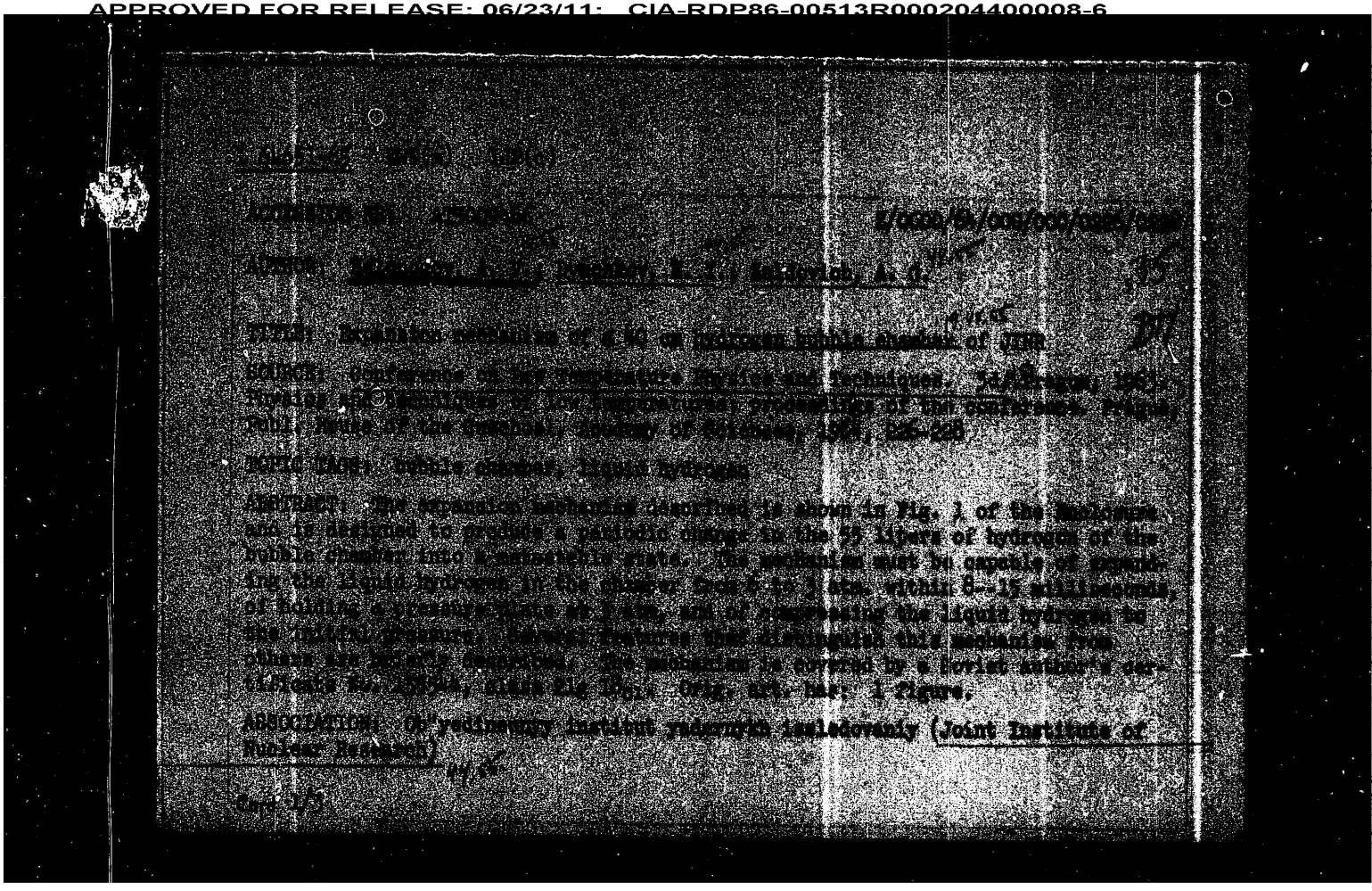
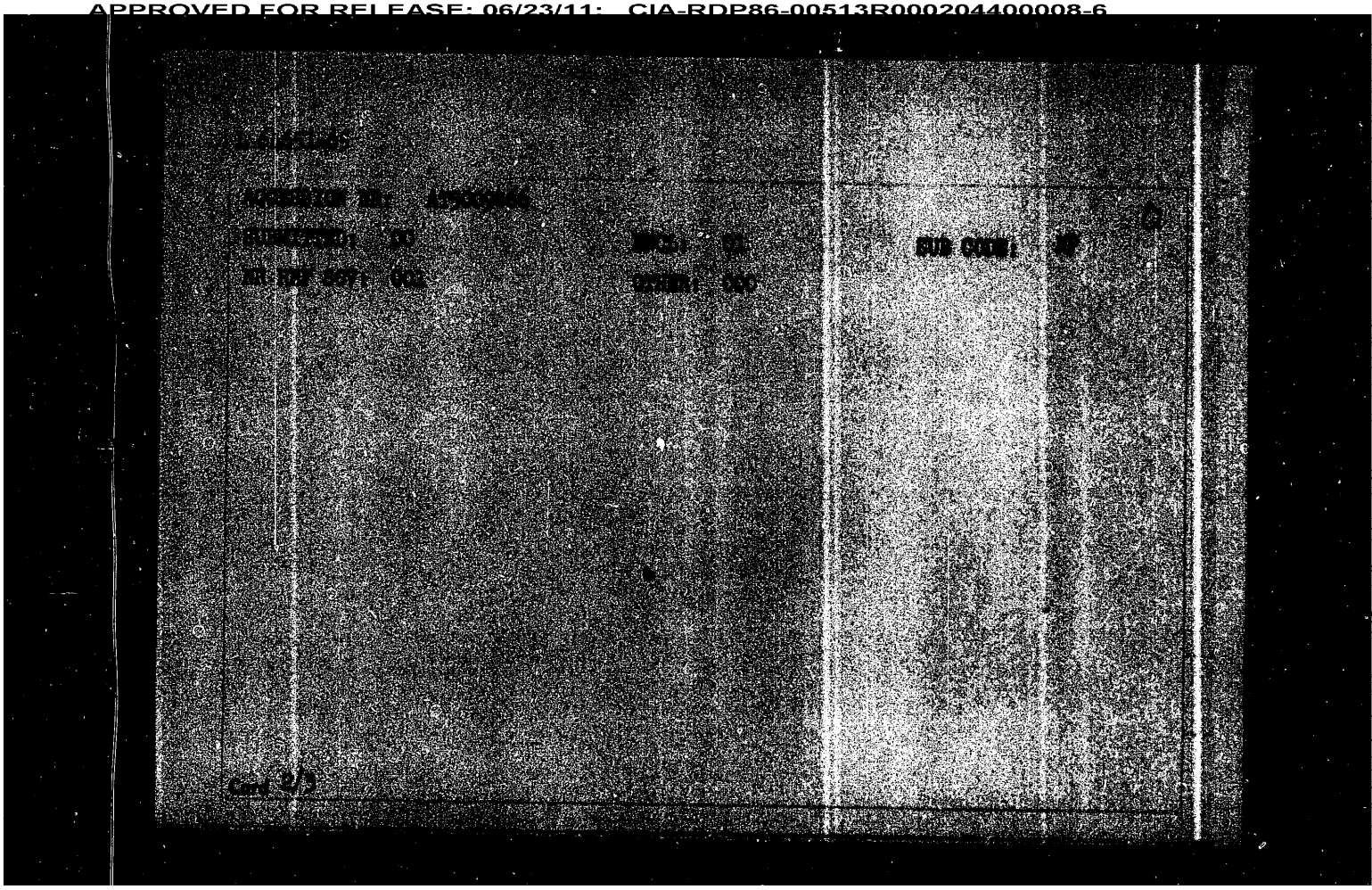


Fig.1

BELONOGOV, A.V.

Safety valve for vacuum systems with self-packing. Prib. i tekh. eksp. 9 no.1:217-218 Ja-F '64. (MIRA 17:4)





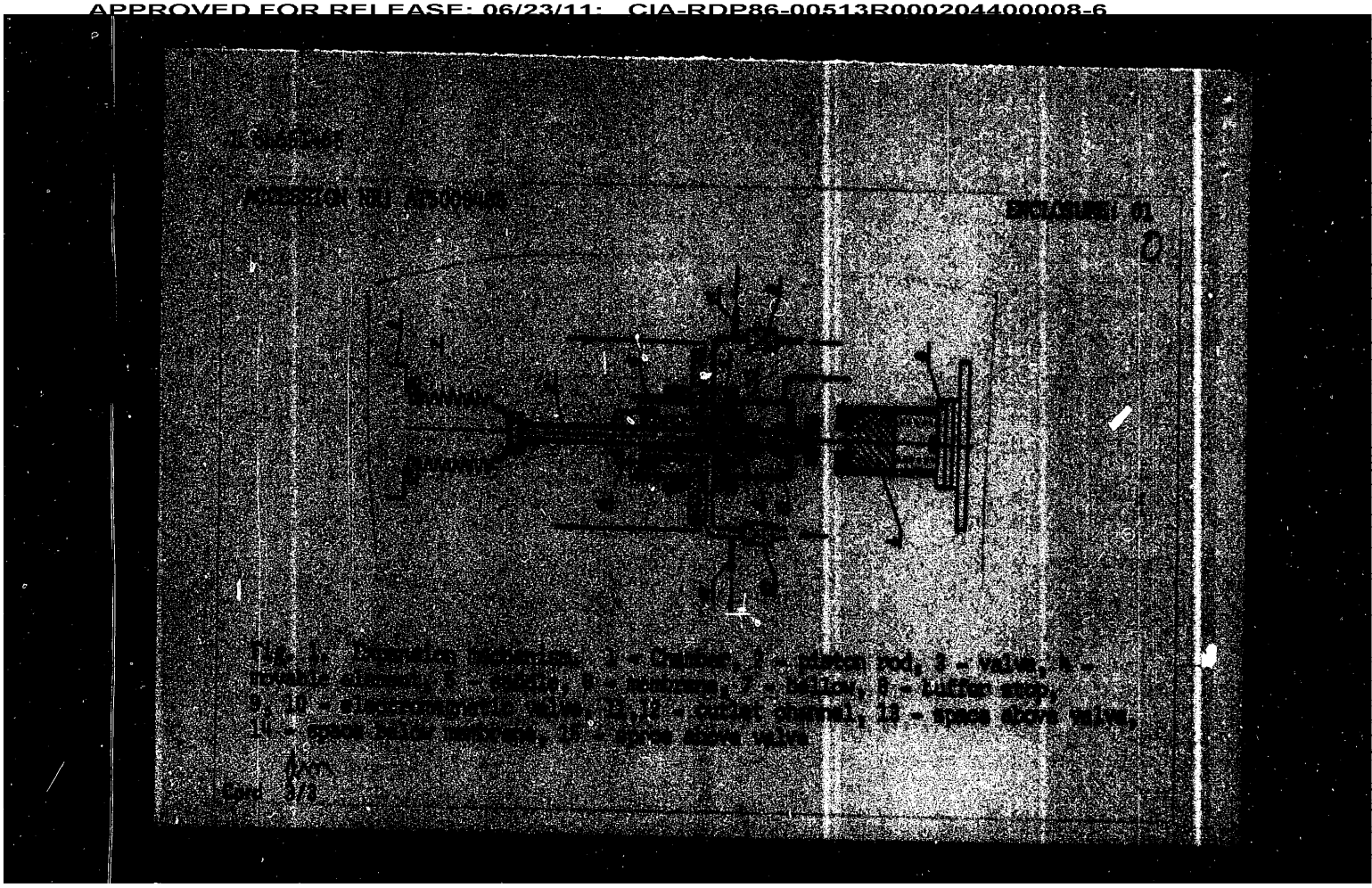


Fig. 1. Pneumatic accumulator: 1 - chamber, 2 - piston rod, 3 - valve, 4 - movable element, 5 - piston, 6 - membrane, 7 - bottom, 8 - buffer step, 9, 10 - electromagnetic valve, 11, 12 - outlet channel, 13 - space drain valve, 14 - space below membrane, 15 - space above valve.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204400008-6

L 7027-66 EWT(l)/T/EED(h)-3 LIP(c)
ACC NR: AP5026831 SOURCE CODE: UR/0286/65/000/017/0117/0117

AUTHOR: Frolova, V. S.; Yurovskiy, Kh. G.; Belonogov, B. I.; Fedichkina, A. A.; Dymov, A. F.

ORG: none

TITLE: A copying device for transferring a graphic image by photographic contact printing. Class 57, No. 174522 [announced by Organization of the Ministry of the Aviation Industry SSSR (Organizatsiya ministerstva aviatsionnoy promyshlennosti SSSR)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 117

TOPIC TAGS: photographic printing, printing machinery

ABSTRACT: This Author's Certificate introduces a copying device for transferring a graphic image by photographic contact printing. The installation contains an illuminator, a rotating table, and a clamping mechanism with vacuum contact between the original and the light-sensitive material. For airtight sealing during printing on large metal plates, the clamping mechanism is equipped with a cover made of an elastic film, e. g. polyethylene. This film covers the surface of the rotating table and is clamped around the edge of the table by an air-filled hose. This cover is wound on drums at the edge of the table.

UDC: 771.318.1

Card 1/2

L 7027-66

ACC NR: AP5026831

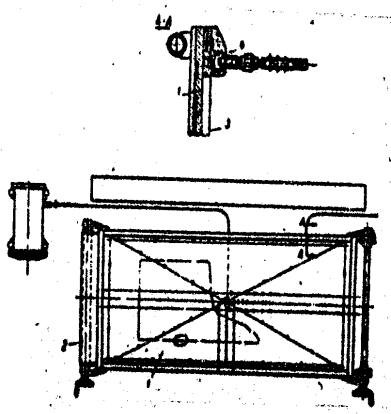


Fig. 1. 1--rotating table; 2--drums; 3--cover; 4--hose

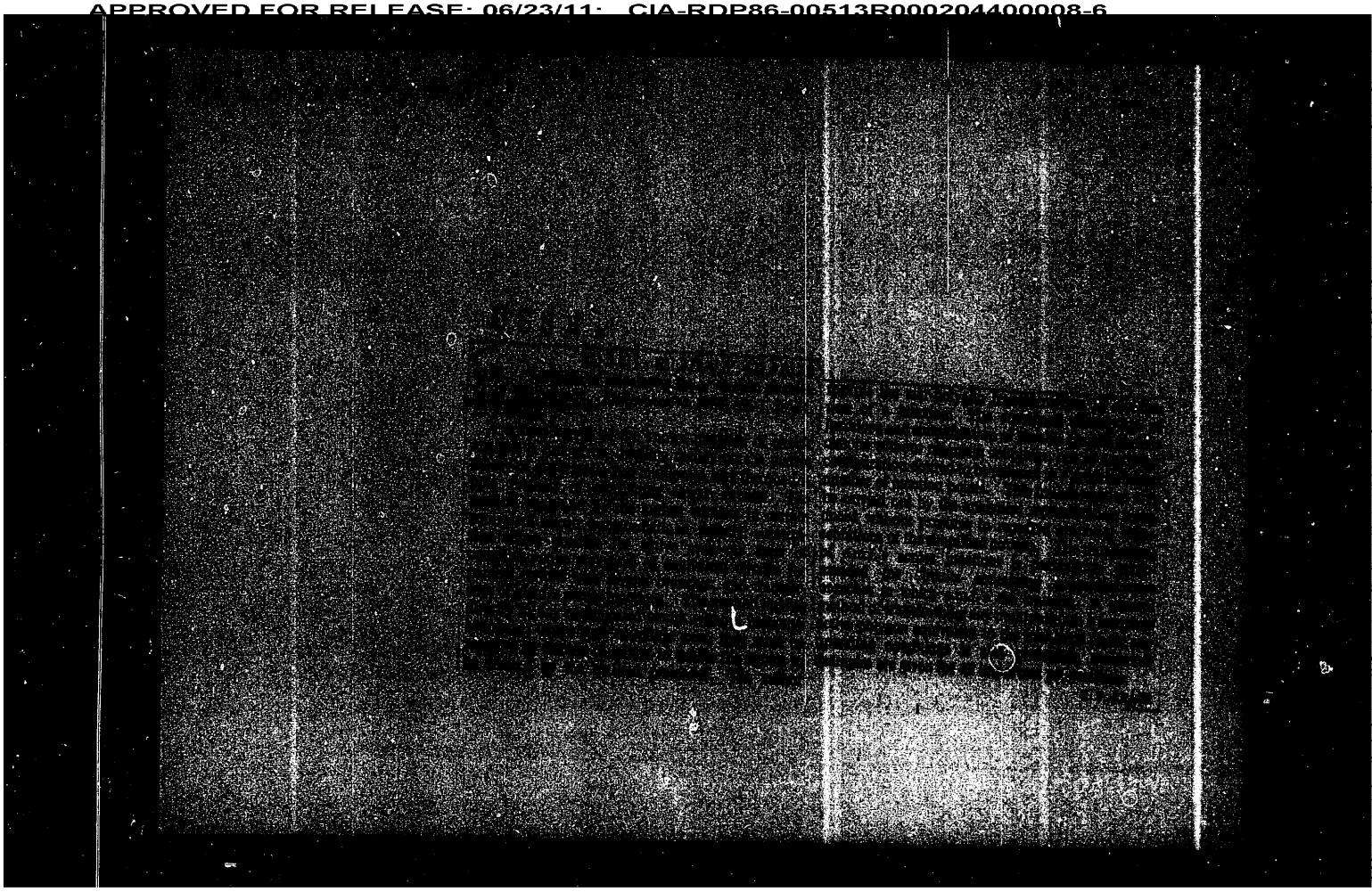
SUB CODE: IE/ SUBM DATE: 23Mar64/ ORIG REF: 000/ OTH REF: 000

BC

Card 2/2

OSOKIN, N.G.; RAZORENOV, A.A.; Prinimali uchastiye: BELONOGOV, F.F., laborant; VINOGRADOV, I.P., laborant

Machinability of nickel silver depending on its structural and chemical composition. Sbor. nauch. trud. GINTSVETMET no.33:364-368 '60. (MIRA 15:3)
(Nickel silver--Analysis) (Metal cutting)



BELONOGOV, G.G., inzhener (Moskva)

Theory of the linear quadripole and the multipole. Elektrichestvo no.6:51-53 Je '56. (Electric networks) (MLRA 9:9)

GRIGOR'YEV, V. I. and BELONOGOV, G. G. (Moscow)

"Application of Methods of Machine Translation to Lexical Codification of Telegraph and Telephone Communications."

Theses - Conferences on Machine Translations, 15-21 May 1958, Moscow.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204400008-6

13 июня

в 17 часов

В. С. Холстед (США)

Стереофоническое радиовещание с использованием частотной модуляции

Э. И. Адирович

Релаксационные процессы и реактивные свойства плоскостных транзисторов

Л. И. Гутенмахер

Электрическое моделирование как новый раздел радиоэлектроники

Работа секций

I. СЕКЦИЯ ТЕОРИИ ИНФОРМАЦИИ

Руководитель **В. И. Сифоров**

9 июня

(с 10 до 16 часов)

В. И. Сифоров,
Л. Ф. Бородин

О кодировании телеграммы равномерными корректирующими кодами

[illegible],
[illegible],
[illegible],
[illegible],
[illegible]

О повышении эффективности использования каналов связи методом автоматического двоичного кодирования сообщений

А. М. [illegible]

Исследование некоторых схем гармонического кодирования речевых сигналов

В. Е. Муравьев

Испытания, демонстрация и перспективы усовершенствования схем гармонического кодирования речи

9 июня

(с 18 до 22 часов)

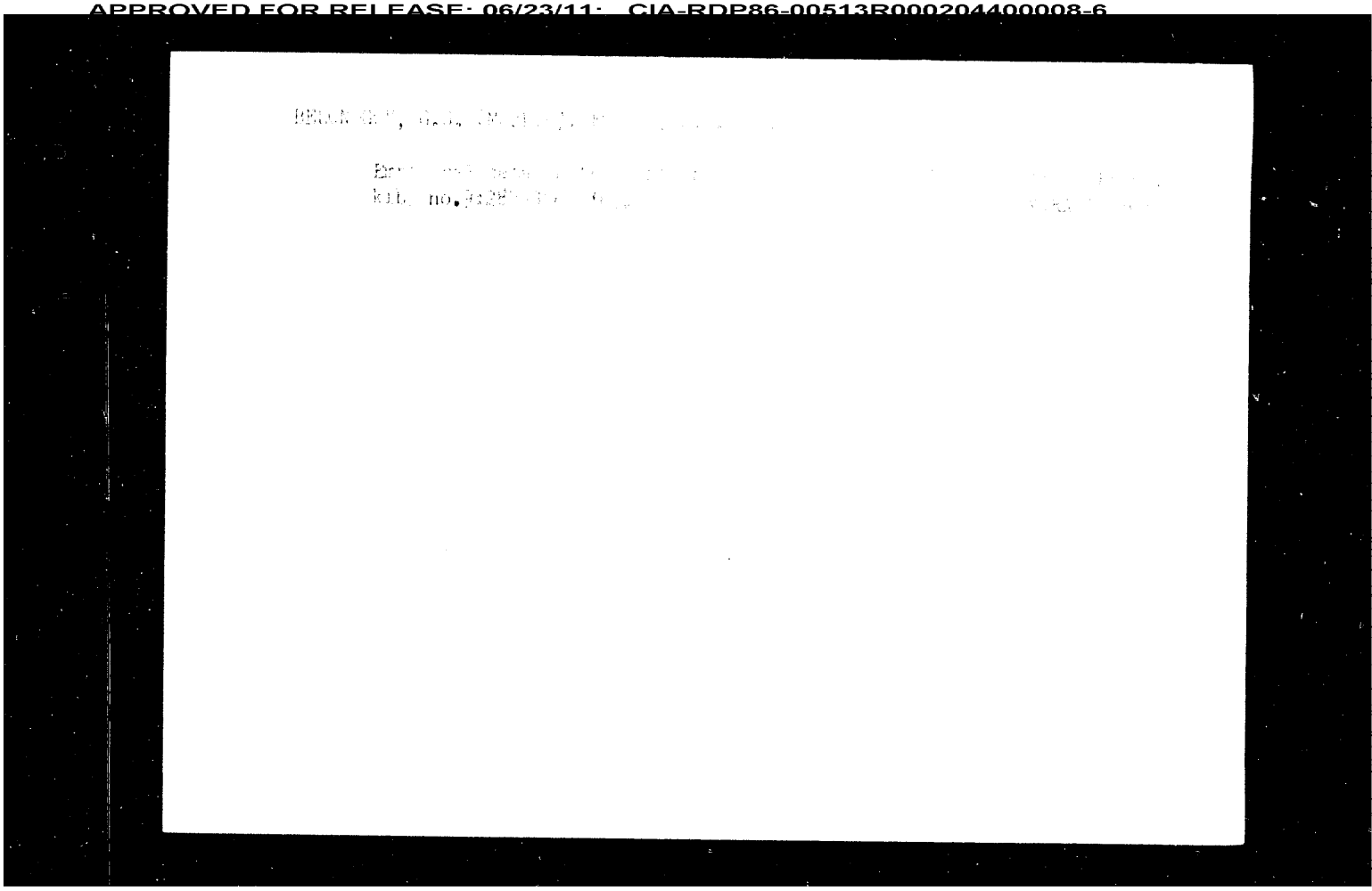
Л. М. Финк

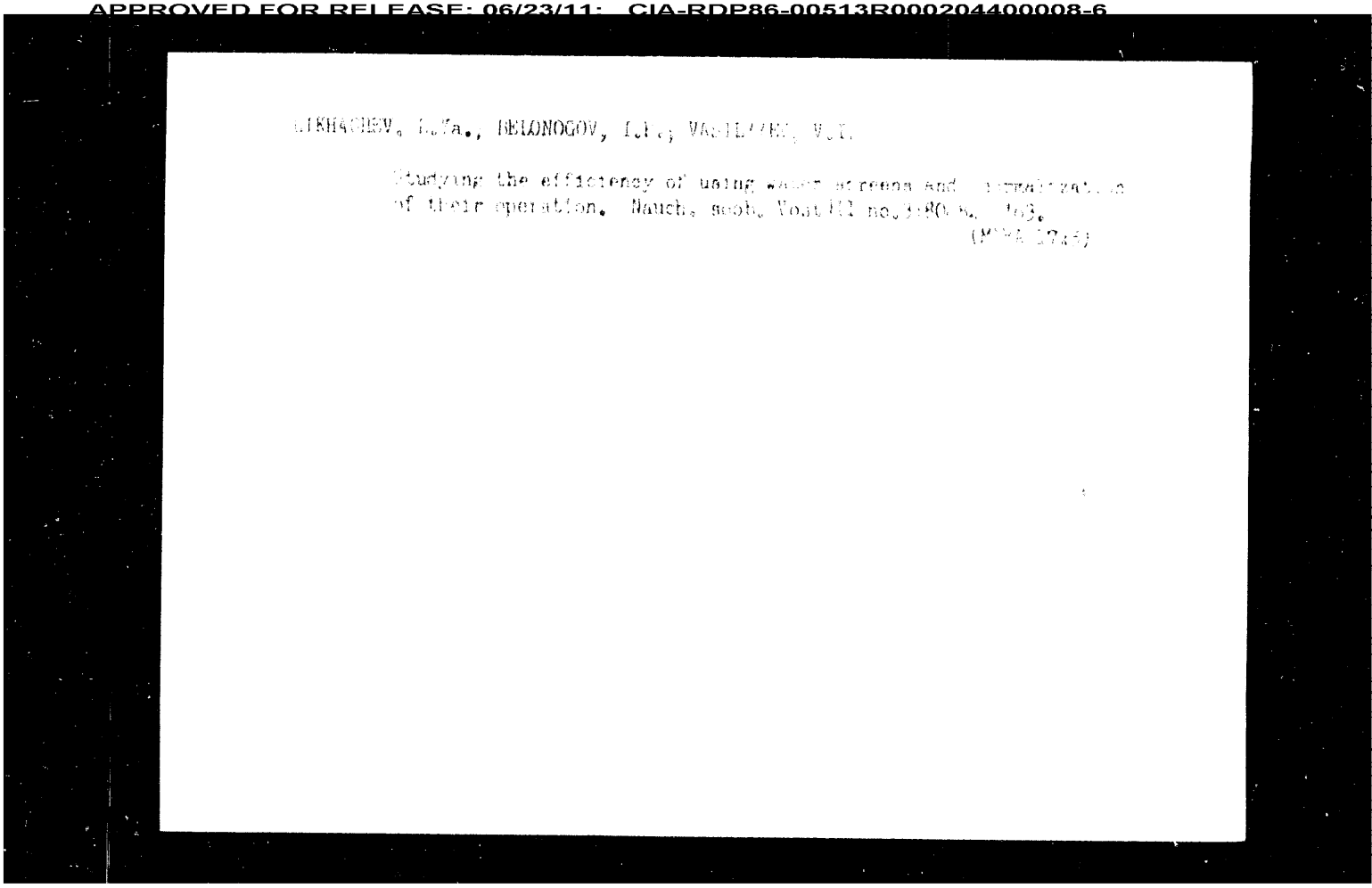
Пропускная способность симметричных каналов с переменными параметрами при неограниченной полосе частот

Л. Ф. Бородин

О скорости передачи сообщений по симметричным каналам

report submitted for the Centennial Meeting of the Scientific Technological Society of Radio Engineering and Electrical Communications im. A. S. Popov (VNORiE), Moscow, 8-12 June, 1959





[illegible], L.Ya., BELONOGOV, I.I.; VASIL'YEV, V.I.

Studying the efficiency of using water screens and [illegible] of their operation. Nauch. soob. Vost.OI no.3:80-[illegible] (MIRA 12:5)

ILLEGIBLE

ILLEGIBLE

BELONOGOV, K.N., LUKOMSKIY, Yu.Ya.

Electronic pH-meter with a glass electrode. Zav.lab. 22 no.7:872-873 '56. (MLRA 9:12)

1. Ivanovskiy khimiko-tekhnologicheskiy institut.
(Electrodes) (Hydrogen-ion concentration)
(Electronic instruments)

SOV/61-59-10-37425

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 10, pp 572-573 (USSR)

AUTHOR: Belonogov, K.N.

TITLE: On the Effect of Orientation, Length, Thickness and Resistance of Fiber on the Resistance of Fibrous Plastics of the "Fiber" Type

PERIODICAL: Tr. Ivanovsk. khim.-tekhnol. in-ta, 1958, Nr 6, pp 9-39

ABSTRACT: The tensile strength of fibrous plastics depending on the length, resistance and orientation of the "fiber" cellulose fiber has been analyzed. The rupture of the plastics in the case of one-, two- and three-dimensional orientation of the fiber in it has been analyzed mathematically. Based on the obtained relationships the qualitative dependence of the properties of a fibrous system on its structure and the character of the elementary fiber can be characterized.

Yu. Lipatov

Card 1/1

NISHCHENKOVA, L.G.; BELOGOGOV, K N.; GOSTIKIN, V.P., ZHORIN, V.V.; BAHMEYEV, A.D.

Catalytic reduction of nitro derivatives with hydrogen. Part. 3. Continuous reduction of sodium para nitrophenolate on mixed catalysts. Izv. vys. ucheb. zav., khim. i khim. tekh. 7 no. 5. 782-786 '64 (MIRA 18:1)

1. Kafedra fizicheskoy i kolloidnoy khimii Ivanovskogo khimiko tekhnologicheskogo instituta.

NISHCHENKOVA, L.G.; BELONOGOV, K.N.; GOSTININ, V.P.; BELOVA, N.A.; NIZOV, G.A.; SELEZNEV, M.M.

Catalytic reduction of nitro derivatives with hydrogen. Part 2: Continuous reduction of sodium p-nitrophenolate on a skeletal nickel catalyst. Izv.vys.ucheb.zav.; khim. i khim. tekh. 6 no.6:952-956 '63. (MIRA 17:4)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, kafedra fizicheskoy i kolloidnoy khimii.

BELONOGOV, K.N.; BOLESLAVSKAYA, N.F.; GOSTIKIN, V.P.; NISHCHENKOVA, L.G.

Catalytic reduction of nitro derivatives by hydrogen. Part 1: Effect of certain factors on the activity and stability of nickel catalysts in the reduction of nitro derivatives by hydrogen in the liquid phase. Izv.vys.ucheb.zav.;khim.i khim.tekh. 6 no.5:781-786 '63. (MIRA 16:12)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, kafedra fizicheskoy i kolloidnoy khimii.

BELONOGOV, M. I., Doc Biol Sci -- (diss) "The Akhaltekinskaya breed of horses, its morphological peculiarities and ways for its improvement." Mos, 1957. 31 pp, including cover (Acad Sci USSR, Inst of Morphology of Animals im A. N. Severtsov), 110 copies. Bibliography: p 31. (KL, 1-58, 116)

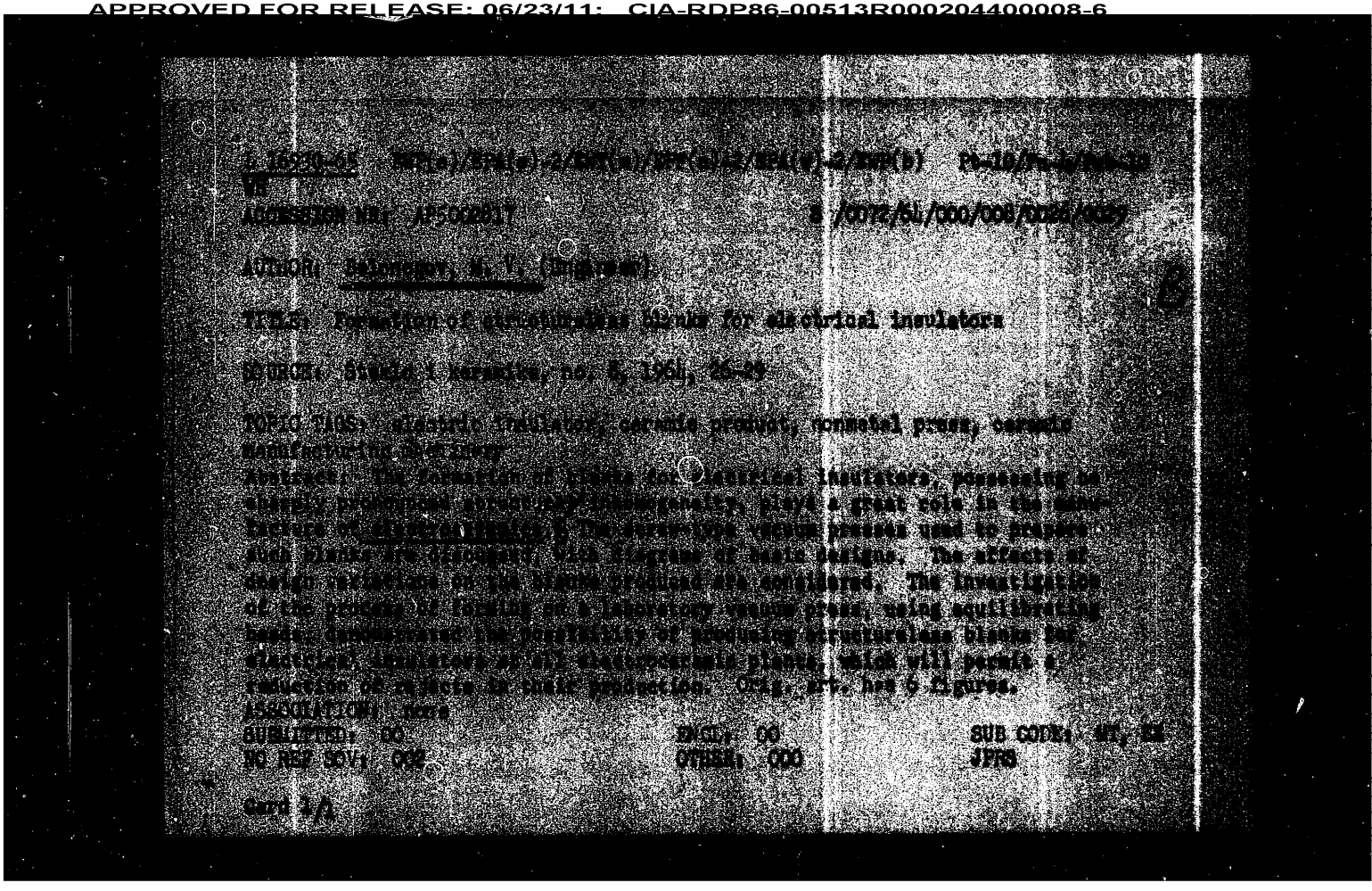
BELONOGOV, Mikhail Ivanovich

[Raising, training, and trying young saddle horses] Vyrashchivanie, trenim i ispytaniia verkhovogo molodniaka. Ashkhabad, Izd-vo Akad. nauk Turkmenskoi SSR, 1956. 36 p. (MIRA 16:3)

(Horses)

BELONOGOV, M.V., inzh.

New method of detecting dislocation of structure in molded parts of electri[illegible]ulators. Elek. i ker. 20 no.8:[illegible]-31 Ag '63. (MIRA 16:11)



L 16939-65 EWP(e)/EWT(m)/EPF(c)/EPR/T/EWP(t)/EWP(b) Pc-10/Pu-4/Pae-10
WW
ACCESSION NR: AP5002017 S/0072/64/000/008/0024/0025

AUTHOR: Solomatov, M. Ye. (Engineer)

TITLE: Formation of ceramic-paste blank for electrical insulators

SOURCE: Steklo i keramika, no. 8, 1964, 24-25

TOPIC TAGS: standard insulator, ceramic product, vacuum press, ceramic manufacturing machinery

ABSTRACT: The formation of blanks for electrical insulators, possessing an already predetermined structure and density, plays a great role in the manufacture of electrical ceramics. The screw-type vacuum presses used to prepare such blanks are described, with diagrams of their designs. The effects of design variations on the blanks produced are considered. The investigation of the process of forming on a laboratory vacuum press, using equilibrating heads, demonstrated the possibility of producing structureless blanks for electrical insulators of all electroceramic plants, which will permit a reduction of rejects in their production. Orig. art. has 6 figures.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MT, EM

NO REF SOV: 002 OTHER: 000 JPRS

Card 1/1

LOSEV, Il'ya Maksimovich; BELONOGOV, P.; ZANKHIN, B.

[Utilize working time more productively; analysis of the workday by the worker]Produktivnee ispol'zovat' rabochee vremia; opyt provedeniia samofotografii rabochego dnia. Moskva, Profizdat, 1961. 55 p. (MIRA 15:10)
(Labor productivity)

BELONOGOV, V.A.

Maximal subgroups. Part 2. Maximal Sylow subgroups of a finite group. Izv. vys. uch.zav.; mat. no.5:3-11 '62. (MIRA 15:9)

1. Tomskiy gosudarstvennyy universitet imeni V.V.Kuybysheva.
(Groups, Theory of)

BELONOGOV, V. A.

Maximal semigroups. Izv. vys. ucheb. zav.; mat. no.4:13-18 '62. (MIRA 15:10)

1. Tomskiy gosudarstvennyy universitet imeni V. V. Kuybysheva.

(Groups, Theory of)

BELONOGOV, V.A.

Finite groups with a pair of nonadjoint nilpotent maximal subgroups. Dokl. AN SSSR 161 no.6:1255-1256 Ap '65. (MIRA 18:5)

1. Tomskiy inzhenerno-stroitel'nyy institut. Submitted November 19, 1964.

BELONOGOV, V.F., inzh.; SHABALIN, G.I., inzh.

Automatic control of type CTs-1.5 and STs-3 centrifugal separators on ships of the merchant marine. Sudostroenie 29 no.4:58-60 Ap '63.
(MIRA 16:4)

(Separators (Machines)) (Ships—Equipment and supplies)

BELONOGOV, Ye. V.

"A Study of Methods for Improving Meadows by Developing the Soil Through Maintaining Former Vegetation." Cand Agr Sci, Kazan' Zooveterinary Inst, Kazan', 1953. (RZhBiol, No 5, Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No.521, 2 Jun 55

BELONOGOV, Ye.V., kand. sel'skokhozyaystvennykh nauk.

Coarse feed production in Chelyabinsk Province. Zemledelie 6 no.6: 69-73 Je '58. (MIRA 11:6)
(Chelyabinsk Province--Forage plants)

BELONOGOVA I.N.

3(4) P 3 PHASE I BOOK EXPLOITATION SOV/1835

Akademiya nauk SSSR. Laboratoriya aerometodov

Trudy, t. 6 (Transactions of the Laboratory of Aerial Methods, USSR Academy of Sciences, Vol 6) Moscow, Izd-vo AN SSSR, 1958. 280 p. Errata slip inserted. 1,500 copies printed.

Resp. Ed.: V.P. Miroshnichenko, Candidate of Geological and Mineralogical Sciences; Ed. of publishing House: D.M. Kudritskiy; Tech. Ed.: E.Yu. Bleykh.

PURPOSE: This volume is intended for geologists, photo interpreters, or other personnel engaged in the study of landscape formations, especially from the standpoint of aerial photography.

COVERAGE: This collection of studies and brief articles treats problems in aerial photography and photo interpretation in relation to geological phenomena. The geographical area of study, with minor exceptions, is the Caspian plains and western shore. Most of the studies are well illustrated with aerial photographs. Aside from the numerous articles on geological phenomena of the

Card 1/6

Caspian basin, the following are also covered: portions of the Russian platform, the Muyunkumy sands of Central Kazakhstan, photo interpretation of clayey flats, desert vegetation and tree cover, the effective lens speed of photographic objectives, photogrammetric determination of profiles on hydro technical models, and others. No personalities are mentioned. References follow each main article.

TABLE OF CONTENTS:

BRIEF ARTICLES

AVAILABLE: Library of Congress

Card 6/6

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6-15-59

BELONOGOVA, I.N.; VINOGRADOV, B.V.

Factors determining the representation of land forms of clay plains on aerial photographs. Trudy Lab. aeromet. 6:100-107 '58.
(MIRA 12:1)

(Plains) (Photography, Aerial)

SOV/11-59-11-11/18

AUTHORS: Belonogova, I.M. and Tolchel'nikov, Yu.S.

TITLE: On the Dependence of the Spectral Luminosity of Minerals on the Degree of Dispersion

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geologicheskaya, 1959, Nr 11, pp 98-101, (USSR)

ABSTRACT: This article deals with the results of a study of the dependence of the spectral luminosity of minerals on the degree of dispersion of their particles. Similar tests have already been made on powdered colored glass by Z.V. Zhidkova, O.P. Girin and B.I. Stepanov. The spectral reflecting capacity of quartz, microcline, garnet and epidote was determined by measuring the spectral luminosity factor $R_\lambda = \varphi(\lambda)$ on the universal FM type photometer. The study of the plotted curves of spectral luminosity (Figure 1) showed that these curves sharply differed from each other. The maximum reflection

Card 1/2

On the Dependence of the Spectral Luminosity of Minerals on the Degree of Dispersion

of garnet was in the spectrum part 560-570, epidot 520-540 and microline - 600 - 560 μ ., The reflection capacity of quartz remained unchanged for the entire measured part of the spectrum. It was found that the spectral luminosity of a mineral increased with the degree of its crushing. The maximum reflection for dark-colored minerals is obtained with samples crushed into particles of less than 100 μ dimension. There are 1 set of graphs, 1 table and 7 Soviet references.

ASSOCIATION: Laboratoriya aerometodov AN SSSR, Moskva (Laboratory of Aerometnods of the AS USSR, Moscow)

SUBMITTED: February 3, 1958

Card 2/2

7 (3), 24 (7)

AUTHORS: Lyalikov, K. S., Belo[illegible]A. I. N., SOV/46-23-10-29/39
Meleshko, K. Ye., Semenchenko, I. V., Kharchenko, A. P.

TITLE: A New Apparatus and a Method of Investigating the Spectra of Earth-surface Reflection

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 10, p 1247 (USSR)

ABSTRACT: At the Laboratoriya aerometodov AN SSSR (Laboratory for Aeromethods of the AS USSR) a new apparatus and a method were developed, which make it possible to investigate the spectral brightness of objects in aerial photographs. Two types of photoelectrical devices were developed. A. P. Kharchenko developed a photoelectrical spectrophotometer which operates within the range of from 400 to 1000 mμ. It is used for investigations carried out from the ground. For the purpose of investigating the spectral brightness of objects from an airplane, Meleshko and Semenchenko developed a fast single-beam photoelectric spectrometer, in the case of which recording takes place in an electron beam tube (a so-called "spectrovisor"). This device operates within the range of 450-900 mμ. Both devices were tested in 1958 with good success.

Card 1/2

A New Apparatus and a Method of Investigating the Spectra of Earth-surface Reflection SOV/48-24-10-29/33

A method for the rapid construction of the curves of spectral brightness was worked out by means of which the spectral characteristic of a number of objects has already been obtained from aerial pictures taken in the South of the European part of the USSR.

Card 2/2

PHASE I BOOK EXPLOITATION SOV/4515
SOV/7-8-9

Akademiya nauk SSSR. Laboratoriya aerometodov

Trudy, tom 9 (Transactions of the Laboratory of Aerial Methods, USSR Academy of Sciences, vol. 9) Moscow, AS SSSR, 1960. 357 p. Errata slip inserted. 1,700 copies printed.

Resp. Ed.: V.V. Sharkov, Candidate of Geography; Ed. of Publishing House: D.M. Kudritskiy; Tech. Ed.: M.Ye. Zenisl'.

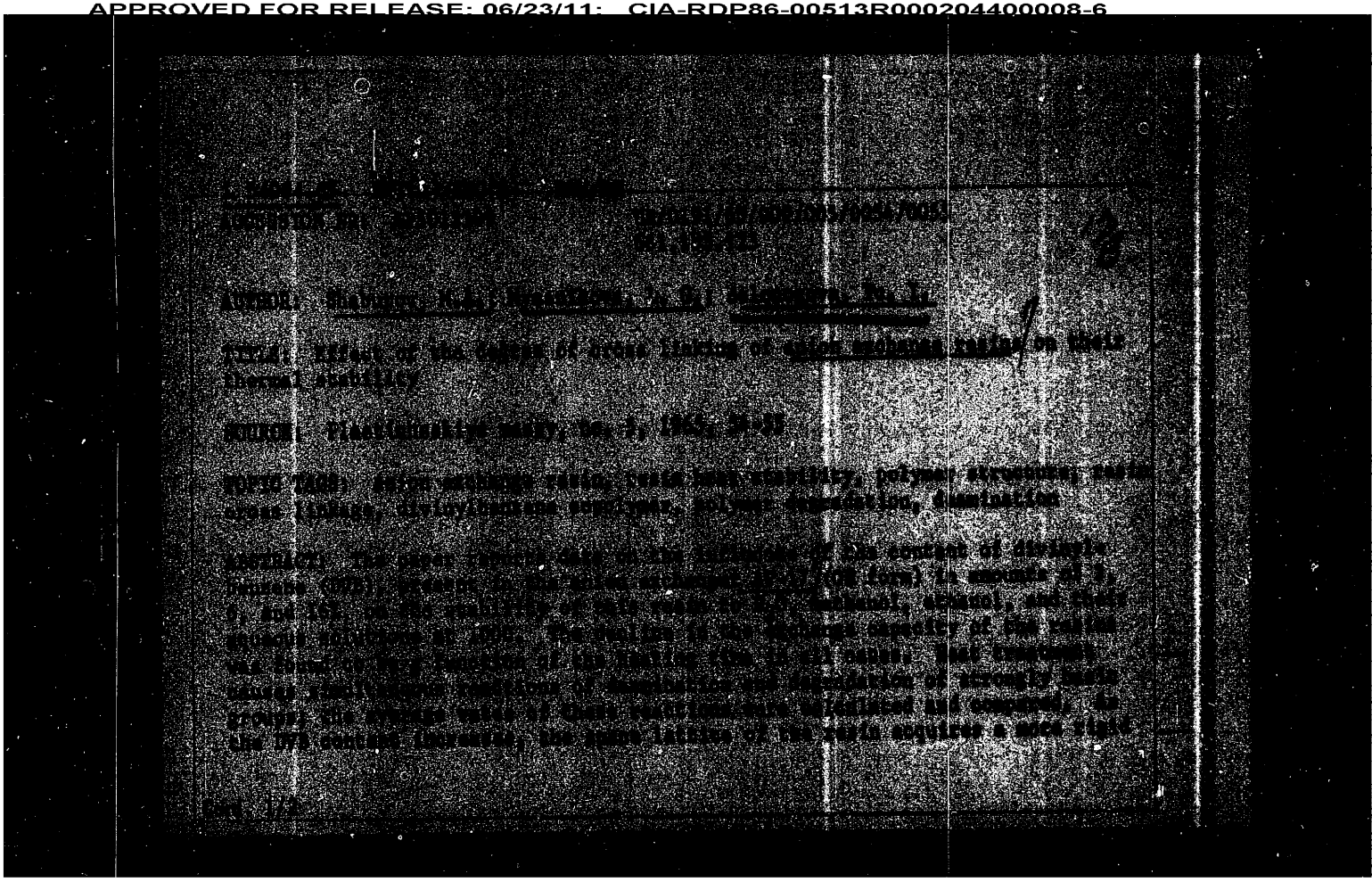
PURPOSE: This volume is intended for geographers, geologists, geodesists, and photogrammetrists.

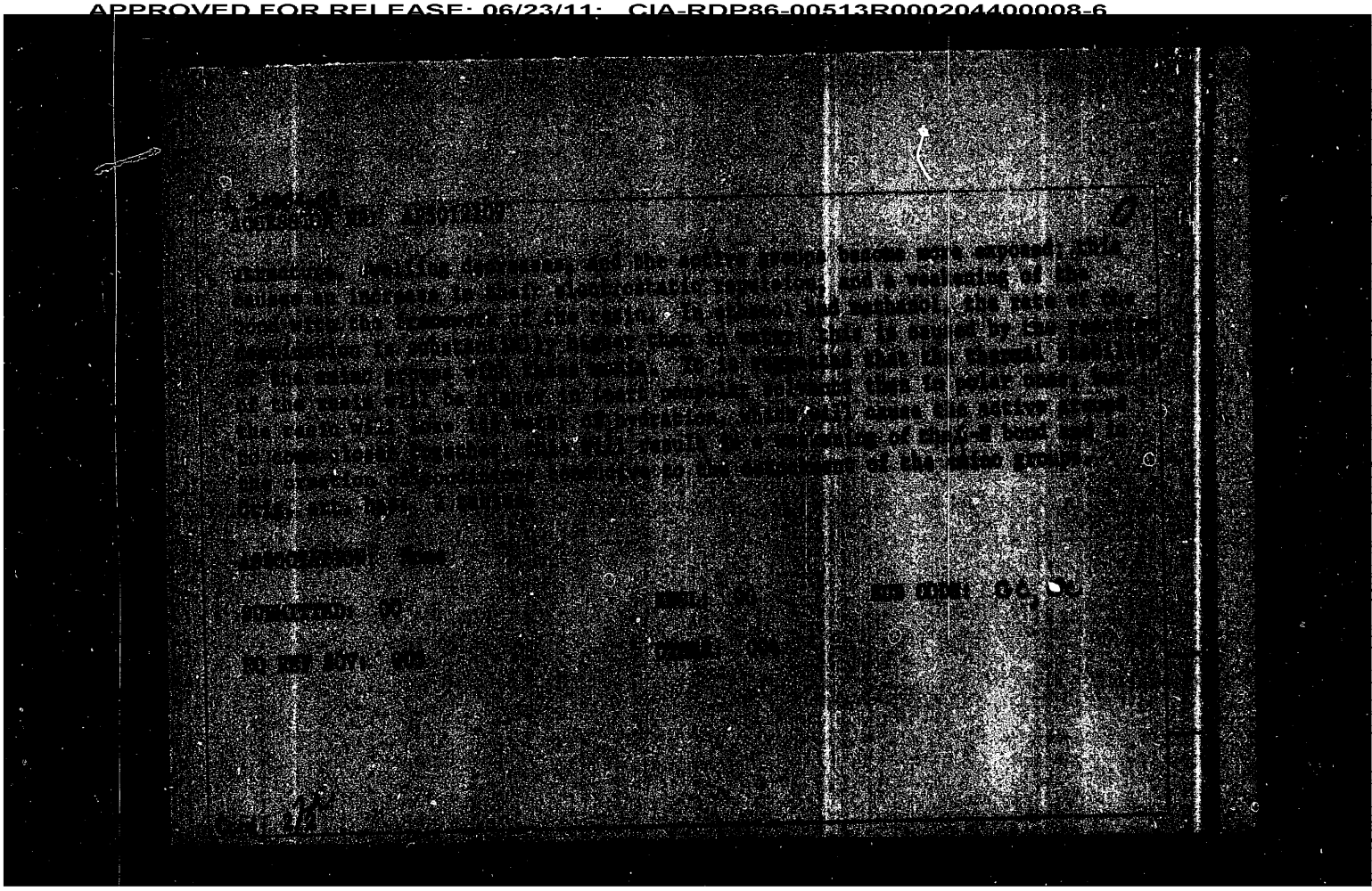
COVERAGE: This collection of 25 articles contains studies of the earth's surface, structure, and geological formations by means of aerial photography. The authors discuss the principles, methods and techniques used in aerial surveying to determine such factors as the petrographic composition of the soil through the measurement of the spectral brightness of surfaces, the geological structure of underwater areas through recorded photographic images, the geological composition and geomorphological structure of underlying layers through the analysis of surface plant coverings, the trends and characteristics of recent tectonic movements through the study of surface features traced photographically

AVAILABLE: Library of Congress

BELOVA, I. N.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204400008-6





SHABUROV, M.A.; MYASNIKOVA, L.G.; BELONOGOVA, Yu.I.

Effect of the degree of crosslinking of anion exchangers on their thermal stability. Plast. massy no.5:54-55 '65.
(MIRA 18:6)

BELONOSOV, A. I.

"Current Time Lag in the Photo-Multipliers, type Y-1 and Y-2"

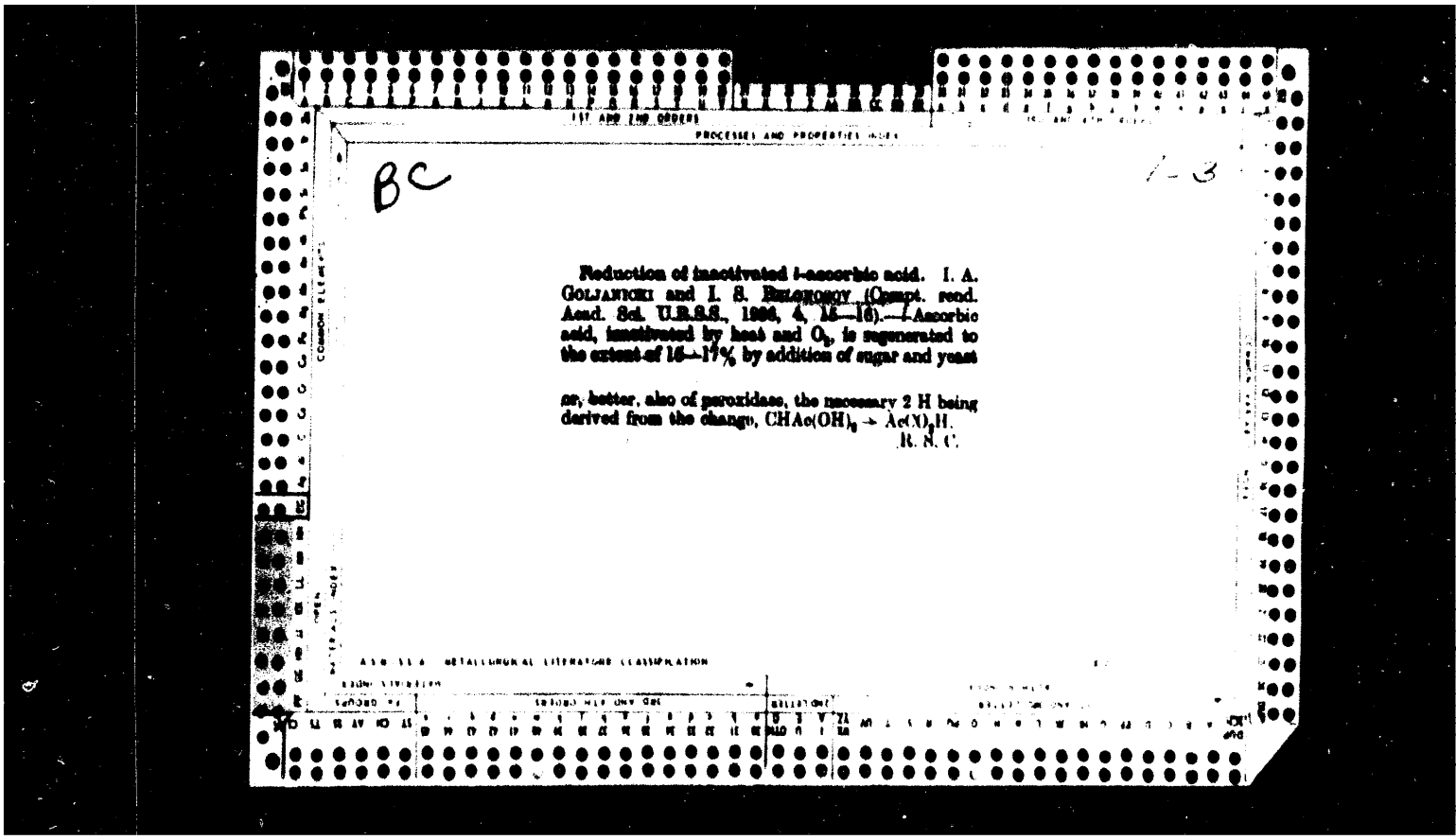
A conference on Electron and Photo-Electron Multiplier; Radiotekhnika i Elektronika, 1957, Vol. II, No. 12, pp. 1552-1557 (USSR)

Abst: A conference took place in Moscow during February 2- and March 5, 1957 and was attended by scientists and engineers from Moscow, Leningrad, Kiev and other centres of the Soviet Union. Altogether, 2[illegible] papers were read and discussed.

BELONOSOV, I.I.; BOBROVA, A.S.; KAS'YANENKO, G.P.; KOTIKOV, S.F.; KULINCHENKO, A.A.; SMIRNOVA, Yu.A. Prinimal uchastiye: MAKSAKOV, V.V., prof.. KABANOV, P.I., prof., glavnyy red.; ANTROPOV, N.P., dotsent, red.; BAZAYEV, M.G., red.; VINOGRADOV, D.I., red.; VESELKINA, A.A., red.; SHADRINA, N.D., tekhn.red.

[Guide] Putevoditel'. No.1. 1958. 367 p. (MIRA 12:8)

1. Vsesoyuznyy tsentral'nyy sovet professional'nykh soyuzov. TSentral'nyy arkhiv. 2. Sotrudniki TSentral'nogo arkhiva Vsesoyuznogo tsentral'nogo soveta professional'nykh soyuzov (for Belonosov, Bobrova, Kas'yanenko, Kotikov, Kulinchenko, Smirnova).
(Trade unions)



BC

1-3

Reduction of inactivated *l*-ascorbic acid. I. A. GOLJANICKI and I. S. BELOSOWOV (Compt. rend. Acad. Sci. U.R.S.S., 1936, 4, 15—16).—*l*-Ascorbic acid, inactivated by heat and O_2, is regenerated to the extent of 15—17% by addition of sugar and yeast or, better, also of peroxidase, the necessary 2 H being derived from the change, $CHAc(OH)_2 \rightarrow Ac(X)_2H$.

R. N. C.

BELONOSOV, I. S.

157T57

USSR/Medicine - Blood Sugar
Blood, Carbon
Compounds

Sep/Oct 49

"Effect of Diethylamide Dioxypicolinic Acid on Carbon Exchange," I. S. Belonosov, Makarevich, Chair of Biochem, Khabarovsk Med Inst, 4 pp

"Biokhim" XIV, No 5

Diethyl dioxypicolinic acid lowers sugar content in blood on average of 114 mg % in comparison to primary hyperglycemia. This compound greatly increases effect of insulin, and prolongs period of hypoglycemia. Effect of adrenalin is slightly

[redacted] 157T57

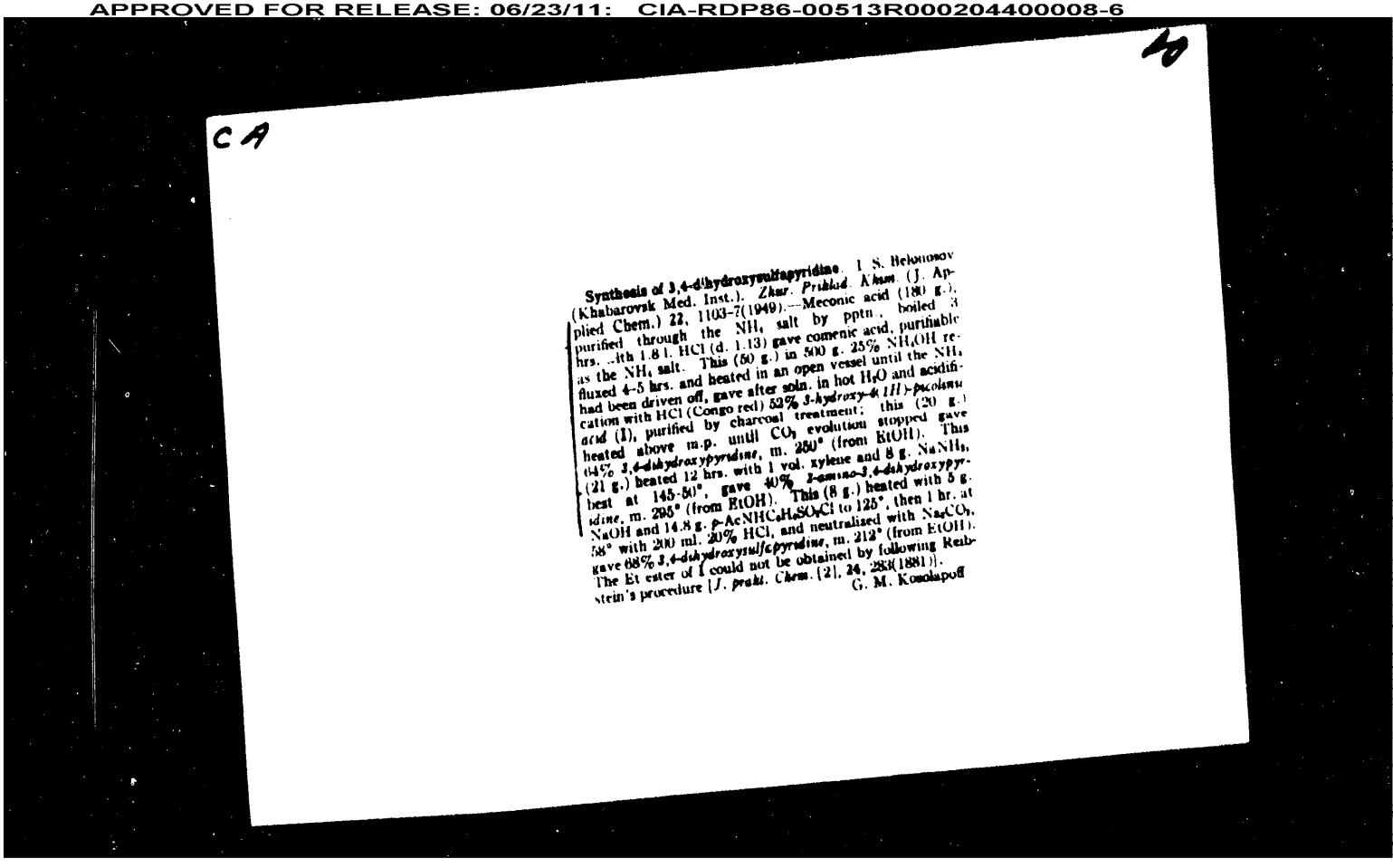
USSR/Medicine - Blood Sugar
(Contd)

Sep/Oct 49

lowered. Decrease in sugar content is result of lowering glycogen content, and at same time stimulates synthesis of glycogen in the liver. Submitted 20 Jan 49.

[redacted] 157T57

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204400008-6



CA

Synthesis of 3,4-dihydroxysulfapyridine. I. S. Belotosov (Khabarovsk Med. Inst.). *Zhur. Prikład. Khim.* (J. Applied Chem.) **22**, 1103–7(1949).—Meconic acid (180 g.), purified through the NH_4 salt by pptn., boiled 3 hrs. with 1.8 l. HCl (d. 1.13) gave comenic acid, purifiable as the NH_4 salt. This (60 g.) in 500 g. 25% NH_4OH refluxed 4–5 hrs. and heated in an open vessel until the NH_3 had been driven off, gave after soln. in hot H_2O and acidification with HCl (Congo red) 52% *3-hydroxy-4(1H)-pyridone acid* (I), purified by charcoal treatment; this (20 g.) heated above m.p. until CO_2 evolution stopped gave (94% *3,4-dihydroxypyridine*, m. 280° (from EtOH). This (21 g.) heated 12 hrs. with 1 vol. xylene and 8 g. $NaNH_2$ at 145–50°, gave 40% *2-amino-3,4-dihydroxypyridine*, m. 295° (from EtOH). This (8 g.) heated with 5 g. NaOH and 14.8 g. *p*-AcNHC$_6$H$_4$SO$_2$Cl to 125°, then 1 hr. at 58° with 200 ml. 20% HCl, and neutralized with Na_2CO_3, gave 68% *3,4-dihydroxysulfapyridine*, m. 212° (from EtOH). The Et ester of I could not be obtained by following Reinstein's procedure [*J. prakt. Chem.* [2], **24**, 283(1881)].

G. M. Kosolapoff

CA

UK

Action of the berries of Schizandra chinensis on carbohydrate metabolism. I. S. Belonosov and Z. E. Sorokina (Med. Inst., Khabarovsk, Siberia). *Biokhimiya* 16, 542-6 (1951).—In the Far East, the berries known as Chinese little lemons have been used in folk medicine against fatigue and as a general tonic. An increase in the blood sugar and lactic acid is observed in man and rabbits right after a meal of berries. The rabbit glycogen and lactic acid content of the muscles increases. The rabbit liver glycogen decreases and the liver lactic acid increases. The substances in the berries that cause these changes are assumed to consist of org. acids, proteins, and extractives. H. Priestley

CA

Organic Chemistry 10

4-Pyromucarboxylic acids and their transformations. I. S. Belousov (Khabarovsk Med. Inst.). *Zhur. Prikład. Khim.* (J. Applied Chem.) 24, 113-16(1951).—Meconic acid (80 g.) in 160 ml. concd. NH_4OH, evapd., and then boiled until CO_2 evolution ceased, gave the *NH*, salt of *comenamic acid* (*3,4-dihydroxypicolinic acid*); treatment with 10% HCl yielded 34.6% *free acid*, m. 260-8°, which with EtOH and dry HCl with cooling gave 40% *Et ester*, m. 204-6°. This (25 g.) let stand overnight with 126 ml. Et_2NH, filtered, and the solid dried, taken up in a little abs. EtOH, satd. with HCl, and dild. with Et_2O, gave a ppt. of crude *N,N-diethyl-3,4-dihydroxypicolinamide-HCl*; purified by repeated treatment with EtOH-Et_2O, it m. 189° (13.3% yield). *Comenic acid* with dry HCl in EtOH gave 40.6% *Et ester*, m. 127°, which with Et_2NH as above gave 49.5% *diethylamine-HCl*, m. 169°, decomp. slowly on standing in the open air; it is toxic to the isolated frog heart.

O. M. Kosolapoff

BELONOSOV, I.S.; KONSTANTINOVA, A.A.

γ-Pyronecarboxylic acids and their transformations. III. Zhur. Priklad. Khim. 25, 1233-6 '52. (MLRA 5:11)
(CA 47 no.17:8744 '53)

1. Kharabovsk Med. Inst.

ILLEGIBLE

BELONOSOV, I.S.; KRASIL'NIKOVA, A.P.

Tautomerism of comenamic acid. Soob.Prim.otd.VKHO no.3: 129-133 '57. (MIRA 13:6)

1. Kafedra organicheskoy i biologicheskoy khimii Khabarovskogo meditsinskogo instituta.
(Picolinic acid) (Tautomerism)

USSR / Pharmacology, Toxicology. Analeptics. V

Abs Jour: Ref Zhur-Biol., No 18, 1958, 85132.

Author : ~~Belonosov, I. S.~~, Makarevich, N. I.
Inst : Not given.
Title : The Influence of Chinese Lemon on Carbohydrate and Phosphorus Metabolism.

Orig Pub: In the collection, Materialy k izuch. zhen'shenya i limonnika, No 3, Leningrad, 1958, 159-165.

Abstract: In experiments on rabbits, studies were made of Chinese lemon seeds which had been ground to powder (L) on the uptake of P^{32} by the blood, the distribution of phosphorus among certain organs, and glycogenolysis. L was given orally to animals daily for three days prior to the injection of P^{32}, and then throughout the experiment, in doses of 0.5 gm/kg.

Card 1/2

BELONOSOV, I.S.; KONSTANTINOV, A.A.

Biologi ignificance of vitamin P. Report No.1: Diuresis and protein composition of the blood serum following intake of vitamin P. Biul.eksp.biol. i med. 48 no.10:44-46 O '59. (MIRA 13:2)

1. Iz kafedry biokhimii (zav. - dots. I.S. Belonosov) Meditsinskogo instituta i biokhimicheskoy laboratorii (zav. - dots. A.A. Konstantinov) Nauchno-issledovatel'skogo instituta epidemiologii i gigiyeny, Khabarovsk. Predstavlena deystvitel'nym chlenom AMN SSSR S.Ye. Severinym.

(URINATION physiol.)
(BLOOD PROTEINS pharmacol.)
(VITAMIN P pharmacol.)

BELONOSOV, I.S.

Effect of root extracts of cultivated ginseng on carbohydrate and phosphorus metabolism. Mat. k izuch. zhen'shenia i lim. no.4:203-208 '60. (MIRA 13:9)

1. Khabarovskiy meditsinskiy institut.
(GINSENG) (CARBOHYDRATE METABOLISM)
(PHOSPHORUS METABOLISM)

BELONOSOV, N. I.

"Improving Horse Breeding in the Central Oblasts of the [illegible] Horses." Sovetskaya Zoo, Konevodstvo, Ptitsevodstvo i Pchelovodstvo, [illegible], Nov 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Contributions Published in the USSR, Higher Educational Institutions (1).

BELONOSOV, N. I. (Ivanovsk Agricultural Institute) and CHISTOV, A. A. (Petrovsk Distillery)

"Biomycin-vitamin concentrate of Petrovsk Distillery."

Veterinariya, Vol. 38, No. 4, 1961, p. 39.

BELONOSOV, N.I., dotsent

Using liquid biomycin made by the Petrovskiy Distillery for preventing paratyphoid in baby pigs. Sbor. nauch. trud. Ivan. sel'khoz. Inst. no.19:124-132 '62.

Biological principles underlying the effect of the biomycin-vitamin concentrate and the effectiveness of its use in animal husbandry. Ibid.:142-148 (MIRA 17:1)

1. Kafedra kormleniya sel'skokhozyaystvennykh zhivotnykh (zav. - dotsent N.I. Belonosov) Ivanovskogo sel'skokhozyaystvennogo instituta.

BELONOSOV, N.I., dotsent; KASHINTSEVA, Z.M.

Liquid biomycin produced by distilleries as a growth stimulator for baby pigs and a means of preventing their diseases. Sbor. nauch. trud. Ivan. sel'khoz. Inst. no.19:133-141 '62.
(MIRA 17:1)

1. Kafedra kormleniya sel'skokhozyaystvennykh zhivotnykh (zav. - dotsent N.I. Belonosov) Ivanovskogo sel'skokhozyaystvennogo instituta.

BELONOSOV, N.I., dotsent; MIT'KINA, N.I., starshiy nauchnyy sotrudnik

Effectiveness of the use of the liquid biomycin preparation made by the Petrovskiy Distillery as a growth stimulator and for preventing bronchopneumonia of baby pigs. Sbor. nauch. trud. Ivan. sel'skos. Inst. no.19:149-154 '62. (MIRA 17:1)

1. Kafedra kormleniya sel'skokhozyaystvennykh zhivotnykh (zav. - dotsent N.I. Belonosov) Ivanovskogo sel'skokhozyaystvennogo instituta.

BELONOSOV, N.I., dotsent; CHISTOV, A.A.

Biomycin and vitamin concentrate product of the Petrovskiy Alcohol Plant. Veterinariia 38 no.4:39-42 Ap '61 (MIRA 18:1)

1. Ivanovskiy sel'skokhozyaystvennyy institut (for Belonosov).
2. Glavnyy inzh. Petrovskogo spirtovogo zavoda (for Chistov).

SOV/124-57-5-5313

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 5, p 30 (USSR)

AUTHOR: Belonosov, S. M.

TITLE: Wave Equation in a Cone Intersected by Concentric Spheres (Volnovoye uravneniye v konuse, usechennom kontsentricheskimi sferami)

PERIODICAL: Tr. Ryazansk. radiotekhn. in-ta, 1956, Vol I, pp 203-205

ABSTRACT: Bibliographic entry

Card 1/1

AUTHOR BELONOSOV, S.M. PA - 2213

TITLE The approximated Integration of the Equations of the Plane Problem of the Plasticity Theory (Priblizhennoye integrirovaniye uravneniy ploskoy zadachi teorii plastichnosti).

PERIODICAL Prikladnaia Matematika i Mekhanika,1957,vol 21,nr 1,pp 103-114 (U.S.S.R.)

Received 3/1957 Reviewed 4/1957

ABSTRACT The present work investigates a method for the approximated integration of hyperbolic differential equations for the equilibrium of an ideal plastic body in the case of a plane deformation. This method is fairly accurate and furnishes a solution which is suitable for the qualitative investigation in a certain variable domain of the parameters of the characteristics.

Problems: At first the differential equations of this problem are written down and transformed. The general solution of these equations can be expressed by two arbitrary functions. On account of its complicated nature this solution is, however, very rarely used. Next, a simplified expression for the approximated solution of the transformed equations found by V.V. SOKOLOVSKIY is given. In every concrete case the constants can be chosen in such a manner that the equations can be approximated in a suitable way. The general solutions of the approximated solutions given here can be expressed in a comparatively simple manner by arbitrary functions. The endeavor is now made to obtain approximated solutions of the (transformed) exact equations which, while having just as simple a form as the solutions of the approximated equations, possess a more accurately approximating

Card 1/2

PA - 2213

The approximated Integration of the Equations of the Plane Problem of the Plasticity Theory.

solution.

The equations of the plane problems of plasticity theory are now approximately integrated. The following equation is here investigated.

$$\frac{\partial^2 u}{\partial \xi \partial \eta} + a\left(\frac{\partial u}{\partial \xi} - \frac{\partial u}{\partial \eta}\right) = 0 \qquad (a = \text{const.})$$

In the case of small t this equation is approximated by the following equation.

$$\frac{\partial^2 u}{\partial \xi \partial \eta} + \frac{a}{\cos at}\left(\frac{\partial u}{\partial \xi} + \frac{\partial u}{\partial \eta}\right) = 0$$

The general solution of this equation is explicitly written down. Next, the approximated solution of the problems of the boundary values in the theory of plasticity is discussed. The author here confines himself to the discussion of the approximated solution of the first main problem. In conclusion, the distribution of the stresses in the plastic zone round an oval hole is computed.

(2 illustrations)

ASSOCIATION Not given
PRESENTED BY
SUBMITTED 19. 1. 1956
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Card 2/2

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S/040/60/024/006/010/024
C 111/ C 333

AUTHOR: Belonosov, S. M (Novosibirsk)

TITLE: Application of Integral Equations to the Torsion of Waves of Variable Diameter

PERIODICAL: Prikladnaya matematika i mekhanika, 1960, Vol.24, No.6, pp. 1042-1046

TEXT: The considered problem leads in cylindrical coordinates r, z, φ (z wave axis) to the solution of

$$(1.3) \qquad \frac{\partial^2 \phi}{\partial r^2} - \frac{3}{r}\frac{\partial \phi}{\partial r} + \frac{\partial^2 \phi}{\partial z^2} = 0$$

where on the generating line L of the wave the values $\phi(r,z)$ are determined by the given stresses:

$$(1.5) \quad \Phi(r,z) = \int_0^s \left(\frac{\partial \phi}{\partial z}\frac{dz}{ds} + \frac{\partial \phi}{\partial r}\frac{dz}{ds} \right) ds =$$

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Application of Integral Equations to the Torsion of Waves of Variable Diameter

$$= \int_0^s \left(\tau_{z\varphi} \frac{dr}{ds} - \tau_{r\varphi} \frac{dz}{ds}\right) \frac{ds}{r^2} + \upsilon = f(s) + C$$

where f(s) is a given function of the arc length s of L and C = const.

If it is put

(2.1) $$\Phi(r,z) = r^2 w(r,z) ,$$

then w(r,z) satisfies the equation

(2.2) $$\frac{\partial^2 w}{r^2} + \frac{1}{r} \frac{\partial w}{\partial r} - \frac{4}{r^2} w + \frac{\partial^2 w}{\partial z^2} = 0$$

and according to (Ref.2) it holds

(2.3) $$w(r,z) = \mathrm{Re} \int_0^{\pi} \Psi(r \cos \lambda + iz) \cos 2\lambda \, d\lambda$$

Application of Integral Equations to the Torsion of Waves of Variable Diameter

Since the representation (2.3) is not unique, the author integrates twice partially and obtains the unique representation

$$(2.4)\quad w(r,z) = r^2 \int_0^{\pi} \mathrm{Re}\,\chi(r\cos\lambda + iz)\sin^4\lambda\, d\lambda \qquad (\chi(\tau) = \psi''(\tau))$$

and thereby

$$(2.5)\quad \phi(r,z) = r^4 \int_0^{\pi} \mathrm{Re}\,\chi(r\cos\lambda + iz)\sin^4\lambda\, d\lambda \quad .$$

If it is put $\chi = \text{const}$, then one obtains the solution for a circular cylindric wave by moments at infinity. For a cylindric wave with annular slots it must be put $\chi(\tau) = c + \chi_0(\tau)$, where $\chi_0(\tau)$ vanishes at infinity.

If (2.5) is written in the form

$$(2.6)\quad \phi(r,z) = \int_{-r}^{r} \mathrm{Re}\,\chi(\xi + iz)(r^2 - \xi^2)^{3/2}\, d\xi \;=$$

Application of Integral Equations to the Torsion of Waves of Variable Diameter

$$= 2\int_0^r \mathrm{Re}\,\chi(\xi + iz)\,(r^2 - \xi^2)^{3/2}\,d\xi$$

and if (2.6) is understood as a Volterra equation with respect to $\mathrm{Re}\,\chi(\xi + iz)$ (z parameter), where $\Phi(r,z)$ is assumed to be known, then one obtains the integral representation

$$(2.10)\quad \Phi(r,z) = \int_L \nu(t)\,\Phi_0(t,\tau)\,ds + Cr^4\,,$$

where $\nu(t)$ is an arbitrary real function, $\tau = r+iz$, t the complex coordinate of the point of L, ds the arc element of L and

$$\Phi_0(t,\tau) = \mathrm{Re}\left\{\left[(t-\tau)(t+\bar{\tau})\right]^{3/2} - t^3 + 3izt^2 + \frac{3}{2}t(r^2+2z^2)\right\};$$

C = const.

If t_0 is a point of L, then one obtains from (2.10) for $\tau \to t_0$

Application of Integral Equations to the Torsion of Waves of Variable Diameter

the integral equation

$$(2.11) \qquad \int_L \nu(t)\, \Phi_0(t, t_0)\, ds = f(t_0)$$

for the determination of $\nu(t)$; here $f(t_0)$ is known. As an example for the application of the set up (2.10) the author considers a cylindric wave with annular slot.

S. M. Nikol'skiy is mentioned in the paper.

There are 3 figures, and 4 references: 3 Soviet and 1 English.

SUBMITTED: July 20, 1960

Card 5/5

24.4100

69987

AUTHOR: Belonosov, S. M.

S/020/60/131/05/015/069
B013/B007

TITLE: A Plane Problem of the Elasticity Theory for a Wedge With Stresses or Displacements Given on the Edge

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 5, pp 1042-1045 (USSR)

TEXT: The present paper deals with the determination of the two functions $\varphi(z)$ and $\psi(z)$, which are regular within the wedge $-\alpha\pi/2 < \arg z < \alpha\pi/2$, and satisfy the boundary condition $\varkappa\varphi(z_1) - z_1\varphi'(z_1) - \psi(z_1) = -f(z_1)$. Here, $\arg z_1 = \pm \alpha\pi/2$, $0 < |z_1| < \infty$, $0 < \alpha < 2$ holds, $f(z_1)$ is the given function. According to the terminology by N. I. Muskhelishvili (Ref 1) $\varkappa = -1$ holds in case I of the main problem of the elasticity theory, and in case II $\varkappa > 1$ holds. The wedge is then represented by the function $z = s^\alpha$ on to the right semiplane $\mathrm{Re}\, s > 0$, and the author defines $\Phi(s) = \varphi(s^\alpha)$, $\Psi(s) = \psi(s^\alpha) + s(e^{-i\pi\alpha}/\alpha)\Phi'(s)$, $m = \sin\pi\alpha/\pi\alpha$, $s = \sigma + i\tau$, $f_1(\tau) + if_2(\tau) = f(\tau^\alpha e^{i\pi\alpha/2})$. If $\Phi(\infty) = 0$, the problem is reduced to solving the functional equation

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A Plane Problem of the Elasticity Theory for a Wedge With Stresses or Displacements Given on the Edge

S/020/60/131/05/015/069
B013/B007

$\varkappa\Phi(s) + m\int_0^\infty \frac{\tau\overline{\Phi'(i\tau)}}{i\tau - s}\,d\tau = \frac{1}{2\pi}\int_{-\infty}^{\infty}\frac{f_1(\tau)+if_2(\tau)}{i\tau - s}\,d\tau \equiv A(s)$ with respect to the function $\Phi(s)$, and afterwards $\Psi(s)$ is calculated in accordance with $\Psi(s) = \frac{1}{2\pi}\int_{-\infty}^{\infty}\frac{f_1(\tau)-if_2(\tau)}{s - i\tau}\,d\tau - m\int_0^\infty \frac{\tau\overline{\Phi'(i\tau)}}{s - i\tau}\,d\tau$. After application of the unilateral Laplace transform $\Phi(s) = \int_0^\infty u(x)e^{-sx}dx$, $A(s) = \int_0^\infty F(x)e^{-sx}dx$ to (4), one obtains the integral equation $\varkappa u(x) - m\int_0^\infty \frac{y\overline{u(y)}}{(x+y)^2}\,dy = F(x)$ for $u(x)$. The kernel of this equation is homogeneous of the degree -1, and therefore one obtains the solution by means of the Riemann-Mellin integral transform in closed

Card 2/4

A Plane Problem of the Elasticity Theory For a Wedge With Stresses or Displacements Given on the Edge

3/020/60/131/05/015/069
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form. By immediate integration of this solution one obtains $\varkappa\Phi(s) = A(s) + \int_0^1 \left[A\left(\frac{s}{t}\right) + A(st)\right] M(t)dt + \int_0^1 \left[\overline{A\left(\frac{s}{t}\right)} + \overline{A(st)}\right] N(t)dt$. The rather complicated expressions for the functions $M(t)$ and $N(t)$ are explicitly written down. Table 1 contains the numerical values of the functions $M(t)$ and $N(t)$ for different values of t and $m/\varkappa$. In practical calculations, the functions $M_0(t)$ and $N_0(t)$ must be approximated by simple piece-by-piece continuous functions. General approximation formulas holding for qualitative investigations (accurate to within 5 to 10%) are given. Further, $\alpha < 1$ is to hold. As a concrete example for the application of the method discussed here, the distribution of stresses in a wedge under the action of a concentrated force, P, (acting on one of its planes at the distance r_0 from its vertex) is investigated. Next, the solution for the case $\gamma = -1$, $\beta = \alpha$ is explicitly written down If in the corresponding formulas the passage to the limit $r_0 \to 0$ is made, one obtains Mitchell's well-known solution for the deformation of a wedge by a force acting upon its vertex. There are 2 tables and 5 Soviet references.

Card 3/4

69987

A Plane Problem of the Elasticity Theory for a Wedge With Stresses or Displacements Given on the Edge

S/020/60/131/05/015/069
B013/B007

ASSOCIATION: Institut matematiki Sibirskogo otdeleniya Akademii nauk SSSR (Institute of Mathematics of the Siberian Branch of the Academy of Sciences of the USSR)

PRESENTED: November 19, 1959, by S. L. Sobolev, Academician

SUBMITTED: November 16, 1959

Card 4/4

S/020/60/131/06/17/071
B014/B007

AUTHOR: Belonosov, S. M.

TITLE: The Two-dimensional Problem in the Elasticity Theory for an Infinite Strip With Tensions or Displacements Given at the Edges

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 131, No. 6, pp. 1291 - 1293

TEXT: First, the author investigates the problem with displacements given at the edges of the strip. He derives the two Goursat functions $\varphi(z)$ and $\psi(z)$ and obtains solution (4), which for $\varkappa > 1$ is analogous to the solution of the two-dimensional problem for a wedge, which had previously been obtained by the author (Ref. 1). Next, the problem with tensions given at the edges of the strip is investigated. Here, the boundary conditions suggested by G. V. Kolosov are used for the Goursat functions, and the integral equation (10) is derived. From the latter the equation (4) is obtained as a solution for $\varkappa < -1$. By a transition to the limit $\varkappa \longrightarrow -1$ solution (11) is obtained. In Table 1 values for functions (12) occurring in the solution are given for the time interval t = 0 sec to t = 1 sec. There are 1 table and 3 Soviet references.

Card 1/2

The Two-dimensional Problem in the Elasticity Theory for an Infinite Strip With Tensions or Displacements Given at the Edges

S/020/60/131/06/17/071
B014/B007

ASSOCIATION: Institut matematiki Sibirskogo otdeleniya Akademii nauk SSSR (Institute of Mathematics of the Siberian Branch of the Academy of Sciences, USSR)

PRESENTED: November 19, 1959, by S. L. Sobolev, Academician

SUBMITTED: November 16, 1959

Card 2/2

24.4200

S/044/62/000/002/047/092
C111/C444

AUTHOR: Belonosov, S. M.

TITLE: Plane static problems of the theory of elasticity for the cotter and the stripe

PERIODICAL: Referativnyy zhurnal, Matematika, no. 2, 1962, 78, abstract 2B348. ("Izv. AN Kaz SSR, Ser. matem. i mekhan.," 1960, (1961), vyp. 9(13), 35-55)

TEXT: For the solution of the plane elasticity problem for the cotter and the infinite stripe one proposes a new method, basing on the conformal mapping of the initial domain on the half-plane and on the application of the Laplace transformation on the obtained boundary conditions. At the end the problem leads to the determination of the complex function u(x) out of the equation

$$Lu(x) - m \int_0^\infty \frac{yu(y)}{(x+y)^2}\, dy = \alpha(x) . \qquad (1)$$

The author applies the Mellin-transformation on (1) and obtains for the real and imaginary parts of u(x) expressions in quadratures. For

Card 1/2

Plane static problems of the...

the searched tension function a relatively simple formula is obtained. One considers the influence of a single force on the edge of a rectangular cotter as an example. The same method is used for the solution of mixed problems for cotter and stripe, as well as for the solution of the bending problem for a cotter-shaped plate.

[Abstracter's note: Complete translation.]

Card 2/2

BELONOSOV, S. M.

Doc Phys-Math Sci - (diss) "Basic plane static tasks of the theory of elasticity for single-connected and double-connected areas." Novosibirsk, 1961. 18 pp; (Academy of Sciences USSR, Siberian Division, Joint Academic Council for Physics-Mathematical and Technical Sciences); 220 copies; price not given; bibliography on pp 16-18 (19 entries); (KL, 5-61 sup, 190)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204400008-6

S/199/61/002/003/002/005
B112/B203

AUTHOR: Belonosov, S. M.

TITLE: Method of solving plane static problems of the elasticity theory for doubly connected domains

PERIODICAL: Sibirskiy matematicheskiy zhurnal, v. 2, no. 3, 1961, 341 - 365

TEXT: In the present paper, the author generalizes his method of solving plane static elasticity problems for simply connected domains to doubly connected domains. Two functions $\varphi(z)$ and $\psi(z)$, analytic in the doubly connected domain D, are required which satisfy the boundary condition: $\kappa\varphi(\xi) - \xi\varphi'(\xi) - \psi(\xi) = g(\xi)$ (1.1). $g(\xi)$ is a function given on the contour $L = L_0 + L_1$ of D, κ is a constant. According to N. I. Muskhelishvili, the two fundamental problems of the plane elasticity theory correspond to the values $\kappa = \kappa_1 = -1$ and $\kappa = \kappa_2 > 1$. The functions φ and ψ must have the form:

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Method of solving plane static.....

$$\varphi(z) = -\frac{X + i Y}{2\pi(1 + \kappa_2)} \ln z + \varphi_0(z), \quad \psi(z) = \frac{\kappa_2 (X + i Y)}{2\pi(1 + \kappa_2)} \ln z + \psi_0(z) \tag{1.2}$$

to fulfill certain conditions. Here, X and Y are the components of the external force. The integral of the external force extended over the whole contour L must disappear because of (1.2). By the Schwarz integral operator,

$$\frac{1}{4\pi}\int_L g(\quad) T(z, \zeta) ds,$$

the boundary function $g(\zeta)$ is uniquely decomposed into two boundary functions $G(\zeta)$ and $H(\zeta)$ which are analytic in the range D: $g(\zeta) = G(\zeta) + \overline{H(\zeta)}$. S. G. Mikhlin, N. I. Akhiyezer and G. V. Kolosov studied the Schwarz operator. The author indicates some basic properties of this operator, particularly the representation of its kernel T by

elliptic functions in the case of a circular ring. The circular-ring problem with given boundary shifts leads to

$$\varphi_0(z) = \sum_{k=-\infty}^{\infty} C_k z^k,$$

$$C_k = \frac{a_k \varkappa (q^{-k} - q^k)(q^{k-2} - q^{2-k}) - \overline{a_{2-k}}(k-2)(q^{-1} - q)(q^{k-2} - q^{2-k})}{\varkappa^2 (q^{-k} - q^k)(q^{k-2} - q^{2-k}) + k(k-2)(q^{-1} - q)^2} \quad (2.8)$$

$$(k = \pm 1 \pm 2, \ldots),$$

where q is the ratio of the ring radii, and a_k are the coefficients of the expansion $G(z) = \sum_{k=-\infty}^{\infty} a_k z^k$. In a similar manner, the author treats

the circular-ring problem with given contour stresses. He illustrates his results by numerical examples. There are 7 figures, 2 tables, and 10 references: 9 Soviet-bloc and 1 non-Soviet-bloc. The reference to English-language publications reads as follows: Gross W. A., The second Fundamental Problem of Elasticity Applied to a Plane Circular Ring, Zeits. Angew. Math. und Phys., VIII, No. 1, (1957), 71 - 73.

SUBMITTED: April 23, 1960

PHASE I BOOK EXPLOITATION SOV/6477

Belonosov, Sergey Mikhaylovich

Osnovnyye ploskiye staticheskiye zadachi teorii uprugosti dlya odnosvyaznykh i dvusvyaznykh oblastey (Fundamental Plane Static Problems of Simple and Doubly Connected Regions in the Theory of Elasticity) Novosibirsk, Izd-vo Sib. otd. AN SSSR, 1962. 231 p. Errata slip inserted. 2000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Sibriskoye otdeleniye. Institut matematiki.

Ed.: V. M. Bushuyeva; Tech. Eds: A. M. Vyalykh and A. F. Mazurova.

PURPOSE: The book is intended for scientific workers concerned with the theory of elasticity and with boundary problems of mathematical physics.

COVERAGE: A new general method of solving the plane static problems concerning the simply and doubly connected regions in the theory

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of elasticity is presented. Particular attention is paid to the investigation of the effect of corner points (cusps) on contours. The problems associated with "rational" regions (i.e. regions mapped onto a half-plane by rational functions) having corner points are also investigated. Recommendations are made concerning the numerical solution of plane problems by utilizing electronic computers. No personalities are mentioned. There are 88 references, 72 of them are Soviet.

TABLE OF CONTENTS:

L 18640-63 EWT(m)/EWP(r)/BDS AFFTC/APGC EM

ACCESSION NR: AR3006444 S/0124/63/000/008/V015/V015

SOURCE: RZh. Mekhanika, Abs. 8V112 57

AUTHOR: Belonosov, S. M.; Pavlenko, A. L.; Pavlov, B. M.; Rosalyakov, G. S.

TITLE: Transverse shock along a membrane with a circular aperture

CITED SOURCE: Sb. rabot Vy*chisl. tsentra Mosk. un-ta, v. 1, 1962, 183-208

TOPIC TAGS: circular aperture, transverse load, bursting, longitudinal wave, stress

TRANSLATION: The problem of the propagation of waves in an infinite elastic membrane under the influence of a transverse load, suddenly applied to the boundary of a stiff frame of a circular aperture is considered. It is supposed that the load in the initial instant causes speed V at the edge and with time this edge moves forward according to a given law. The force of resistance of the medium surrounding the membrane is taken into account. The differential equation of the problem is introduced; the obtained system has the property that the propagation of its longitudinal and transverse waves are described separately. The leading of fronts of these waves because of the shock character of the load are lines of bursting

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ACCESSION NR: AR3006444

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force. By these lines membrane at any moment of time is subdivided into three parts; the quiet region, the region of pure radial motion and the region of longitudinal-transverse motion. The problem is solved by the method of the characteristic, the condition on the lines of bursting force are determined from the laws of conservation of mass and momentum. Making the transition to finite difference equations, the author furnishes the computation equation for the points of the membrane which are found at the given moment in different regions of motion. As a numerical example, on the Strela computer the calculation for one variant of the problem, for which the initial velocity V_0 equal to 1/4 of the velocity of propagation of the longitudinal waves was carried out. Graphs were constructed on which the shapes, speed and the acceleration of the boundary end as function of time, and position, deformation, and the stress state of the membrane for different moments of time were plotted. Yu. R. Lepik

DATE ACQ: 28Aug63 SUB CODE: AP ENCL: 00

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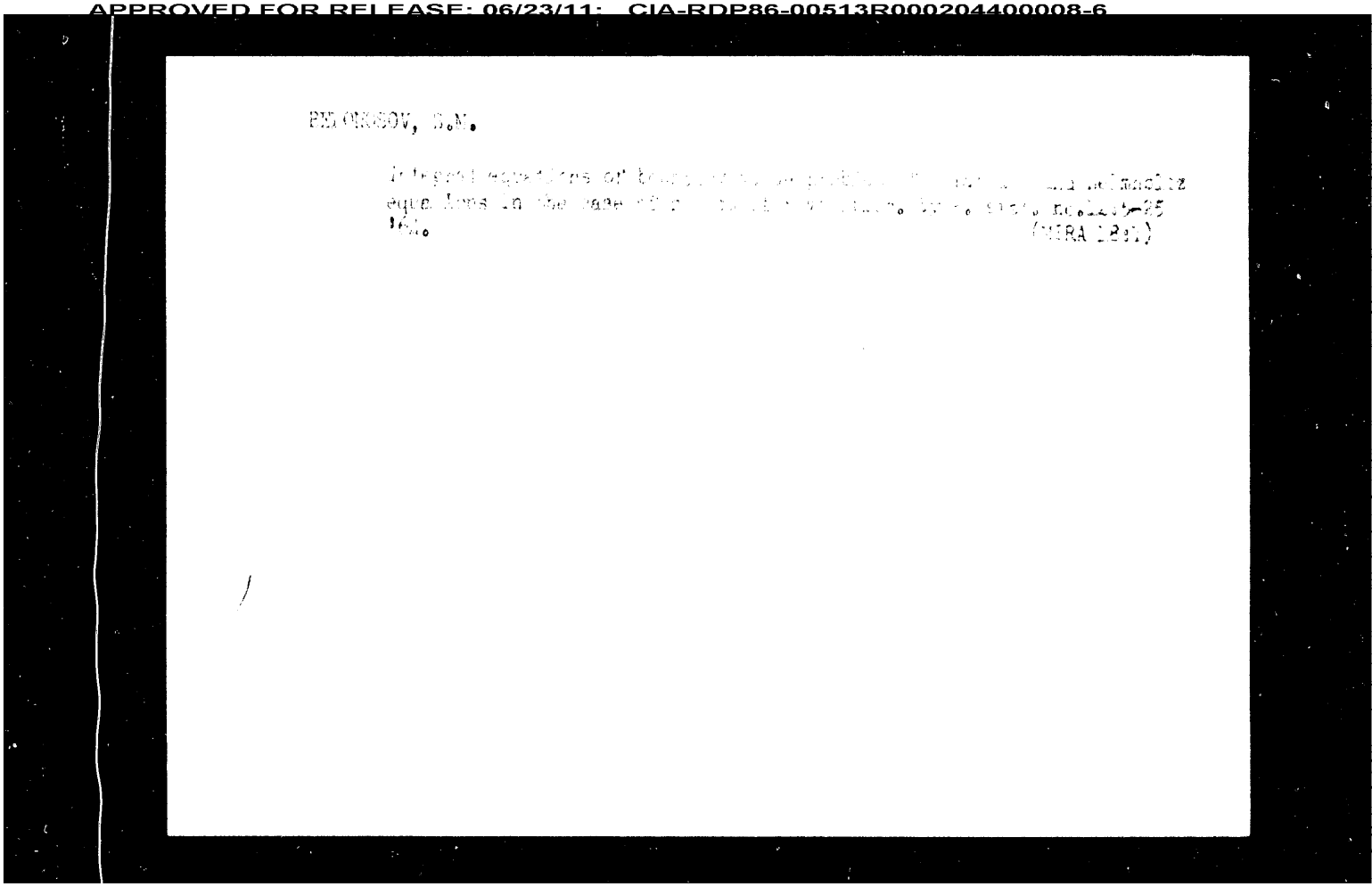


BELOKOSOV, D.N.

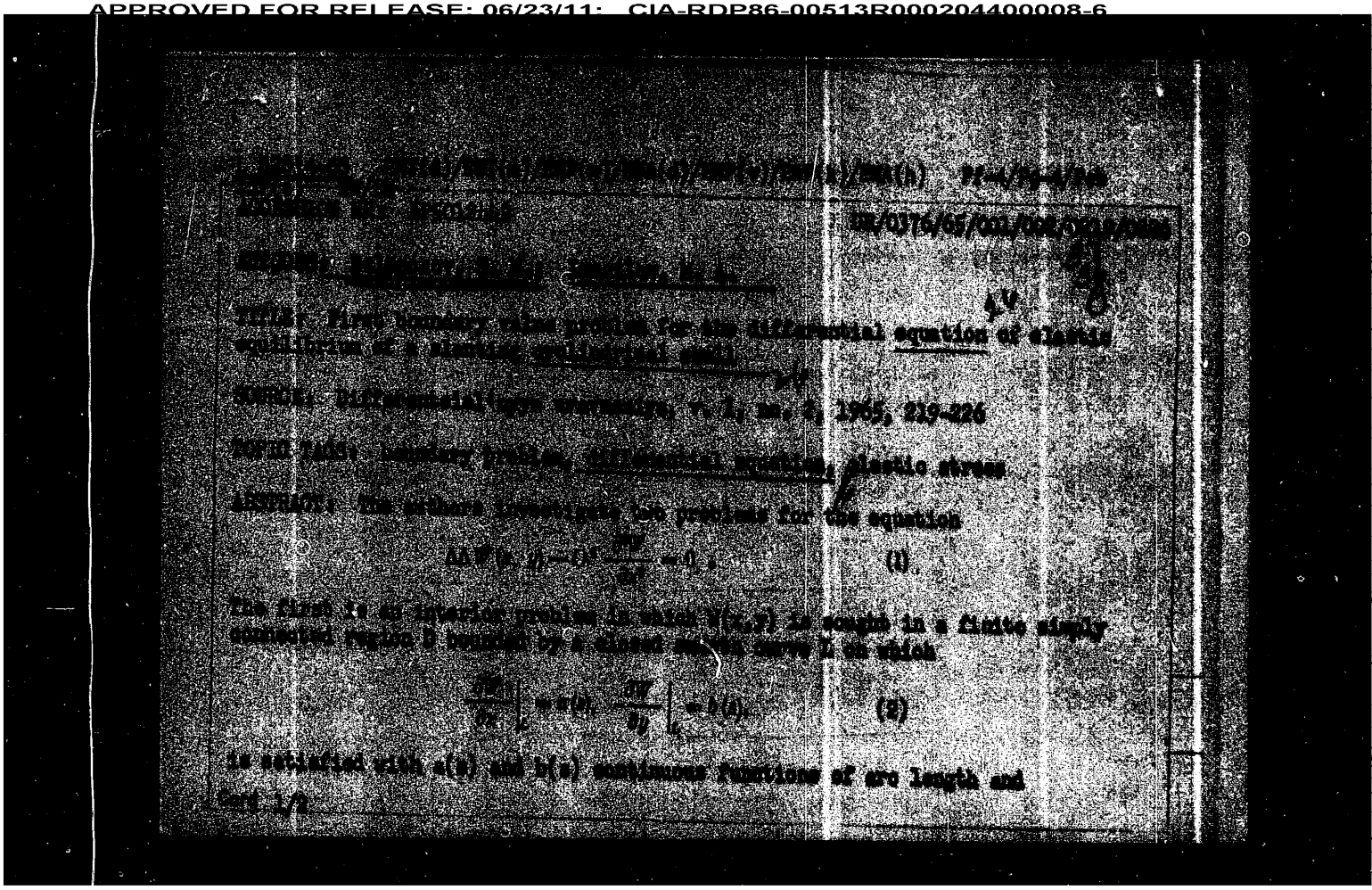
[illegible]

(MIRA 12:1)

BELONOSOV, S. M. (Novosibirsk)

"Mathematical problems of elasticity for the domains with corners"

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 1964.



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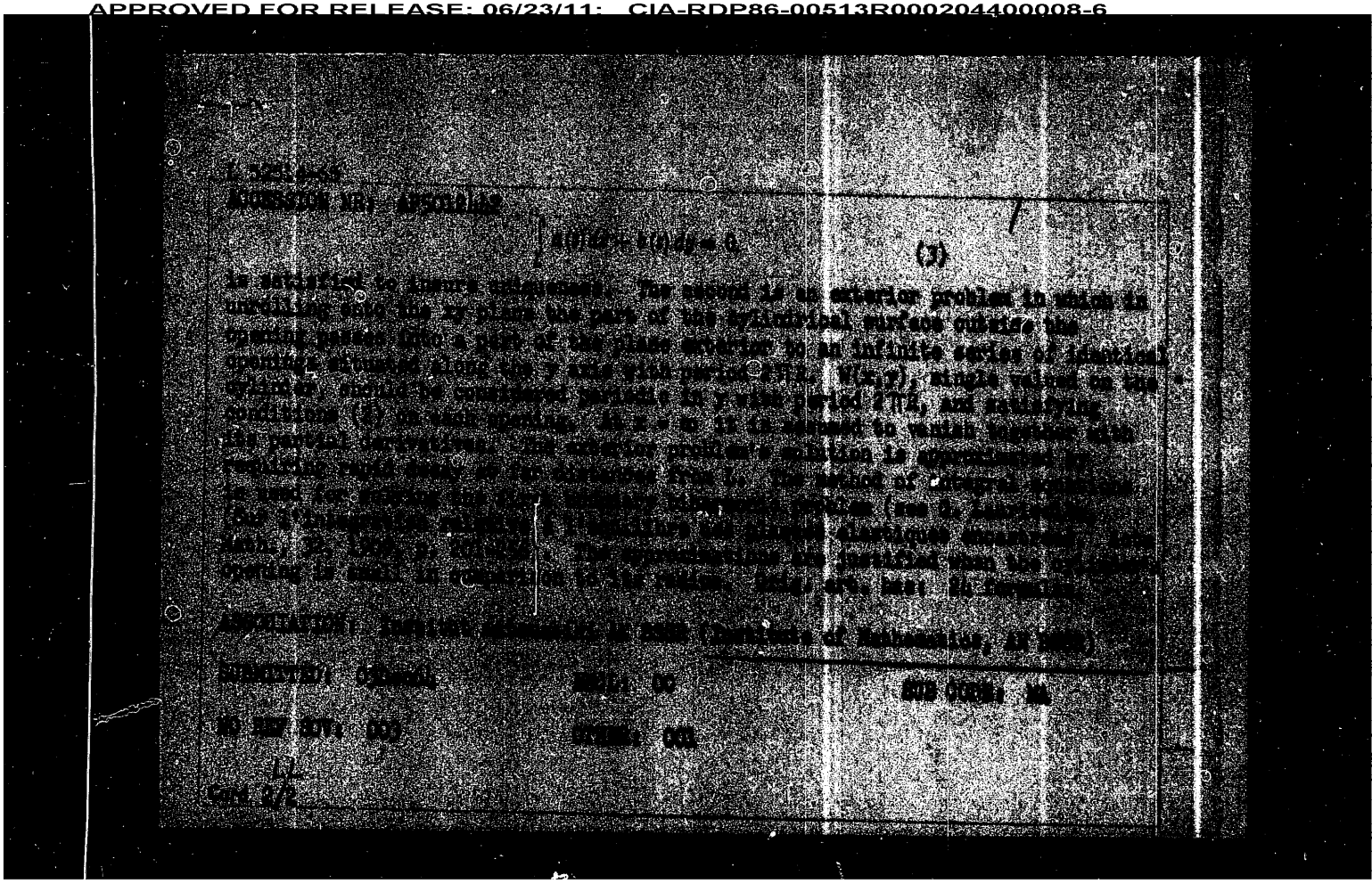

VAN'YAN, L.L.; MOROZOVA, G.M.; BELONOSOVA, A.V.; ZHIGUL'SKAYA, T.A.

Solution of direct problems of electric prospecting by means of electronic computers. Trudy Inst. geol. i geofiz. Sib. otd. AN SSSR no.21:122-132 '63. (MIRA 17:11)

BELONOSOVA, L. I., Cand of Med Sci -- (diss) "Treatment of Dacryocystitis by Methods Used During 1948-1958 at the Kharbarovsk Eye Clinic," Khabarovsk, 1959, 20 pages (Khabarovsk State Medical Institute. Eye Clinic) (KL, 7-60, 110)